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## ALIGNMENTS

RESULT 1
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VERSION JOURNAL REFERENCE KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLE JOURNAL TITLE AUTHORS Pu.C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R. and Hellerqvist,C.G. Direct Submission Submitted (13-MAR-2000) Biochemistry, Vanderbilt University, Scool of Medicine, 23rd@Pierce, Nashville, TN 37232-0146, USA Fu,C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R., Yan,H.-P., Carter,C.E., Shi,E., Venkov,C., Yakes,M.F., Page,D.L. and Identification of a novel membrane protein from mammalian that interact with the anti-pathoangiogenic compound CM101 AF244578 2844 bp mRNA linear Ovis aries membrane glycoprotein SP55 (sp55) mRNA, AF244578.1 GI:9719375 Unpublished Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Caprinae; Ovis.

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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pe
Bovidae; Caprinae; Ovis.
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RESULT 3
AX138494
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AUTHORS
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SOURCE
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Eukaryota; Meteria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 2512)
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Submitted (03-JUN-1999) F.W.
Clinical Genetics, P.O. Box 1
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VAFLTISTTLGGECSSGFSINHJDIABSYAGIILGITWTFATIPGMWGPVIAKSLTPD 
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Sequence 1
AX207624
AX207624.1
                                                                       Eukaryota; Metazoa; Chordata;
Mammalla; Eutheria; Primates;
1 (bases 1 to 2930)
Hellerqvist,C.G.
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                                   Methods for preventing or attenuating using the 9bs-toxin (cml01) receptor a patent: Wo 0156598 A 1 09-AUG-2001; VANDERBILT UNIVERSITY (US)
                                                                                                                         human
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                 Location/Qualifiers
1. .2930
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                                                                                                                                                             from
                                                                                                                                            GI:15422329
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Patent W00156598
                                                                                           Craniata; Vertebrata; Catarrhini; Hominidae;
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                                                     g pathoangiogenic
as a vaccine
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VFGAIFFTLFAKGEVQNWALNDHHGHRH"

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/note="unnamed
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Homo sapiens I
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Fu,C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R.,
Carter,C.E., Shi,E., Venkov,C., Yakes,M.F., Pa
                                                                                                                                                                                                                                                                                     Submitted (13-MAR-2000) Biochemistry,
                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                   Identification of a novel membrane protein from mammalian c
that interacts with the anti-pathoangiogenic compound CM101
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae
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C., Bardhan, S., Cetateanu, N.D.,
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IRAKWNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYSLAVAPLTISTTLGGFCSSG
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Query Match Best Local S Matches 1916

Local Similarity

55.2%;

Score 1570.8; Pred. No. 0; Mismatches

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member 5, clon
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http://www-shgc.stanford.edu
Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and
                                                                                                                                                                                                                                                                                 Dickson,
R. M.
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Submitted (03-JAN-2002) National Institutes of Health, Mammalian Submitted (03-JAN-2002) Cancer Genomics Office, National Cancer Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
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                                                                                                                                                                                                                                                                                                                                                                                                                          Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
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                              /tissue_type="Colon, adenocarcinoma"
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NTVGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNWALNDHHGHRH"

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                                                                                                                                                                      Submitted (29-AUG-2000) to the DDBJ/EMBL/GenBank databases. Sugano, Institute of Medical Science, University of Tokyo, Laboratory of Genome Structure Analysis, Human Genome Center Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-8639, Japan (E-mail:cdnal@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286, Fax:81-3-5449-5416)
                                                                                NEDO human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'-& 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               oligo capping; fis (full insert sequence). Homo sapiens primary human renal epithelial cells clone_lib:HRC clone:HRC01782.
                                                                                                                                                                                                                                                                                                   Sugano, S., Suzuki, Y., Ota, T., Obayashi, M., Shibahara, T., Tanaka, T. and Nakamura, Y.
                                                                                                                                                                                                                                                                                                                                                       Unpublished (2000
                                                                                                                                                                                                                                                                                                                                                                     Ota,T., Suzuki,Y., Obayashi,M., Nishi,T., Nakamura,Y., Isogai,T. and Sugano,S. NEDO human cDNA sequencing project
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Mammalia; Eutheria; Primates; Catarrhini;
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/organism="Homo
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          aggggagttctattta-tttataagaccatacctaaagagatgagctgaaatagaccctt 1898
                                                 gtttgctggaacttacaattcagggtcacatatctggctgcaagtcaggcaacccacaat
                                                                               CATGAAATATCACTAGTTGCCAGAATAATAAAATCAACTGTGTTTAATTATGAATAATAT
                                                                                          TTAATGTTTTTGGTGCCATTTTCTTTACACTATTCGCCAAAGGTGAAGTACAAAACTGGG
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KEYWORDS
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AUTHORS
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2 (bases 1 to 2006)
Sugano,S., Suzuki,Y., Ota,T., Obayashi,M., Nishi,T., Isogai,T., Shibahara,T., Tanaka,T. and Nakamura,Y.

Direct Submission
Submitted (29-AUG-2000) to the DDBJ/EMBL/GenBank databases. Sumio Sugano, Institute of Medical Science, University of Tokyo, Laboratory of Genome Structure Analysis, Human Genome Center; Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-8639, Japan (E-mail:cdnal@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286, Pax:81-3-5449-5416)
NEDO human cDNA sequencing project supported by Ministry of
                                                                                                              NEDO human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'-& 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science,
                                                                                                                                                                                                                                                                                                                                                                   Kawabata,A., Hikiji,T., Kobatake,N., Inagaki,H., Ikema,Y., Okamoto,S., Okitani,R., Ota,T., Suzuki,Y., Obayashi,M., Nishi,T. Shibahara,T., Tanaka,T., Nakamura,Y., Isogai,T. and Sugano,S.
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                                                                                                     University of Tokyo
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RESULT 1
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                                                                                                                                                                                                                                                                                                                                                                                        sequencing vector: M13; M77815; 11% of reads sequencing vector: plasmid; L08752; 88% of reads Chemistry: Dye-terminator ABI; 18 of reads Chemistry: Dye-terminator Big Dye; 98% of reads Consensus quality: 55797 bases at least Q40 Consensus quality: 56081 bases at least Q40 Consensus quality: 56266 bases at least Q20 Insert size: 56441; sum-of-contigs Insert size: 77158; 19.3% error; agarose-fp Quality coverage: 7.34x in Q20 bases; sum-of-contigs Coverage: 547x in Q20 bases; sum-of-contigs Quality
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (09-JUL-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk on Jan 25, 2001 this sequence version replaced gi:11602493.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Web site: http://www.sanger.ac.uk
Contact: humquery@sanger.ac.uk
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AL138833.12 GI:12539481
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Homo sapiens chromosome 6 clone RP3-515P18,
PROGRESS ***, 3 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Assembly program: XGAP4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center project name: dJ515P18
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                                                                                                                                                                                                                                                         arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown This record will be updated with the finished sequence
                                                                                                                                                                                                                            as
be
                                                                                                                                                                                                                                                                                                              NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 56641)
                                                                                                                                              1 35016: contig of 35016 bp in
35017 35116: gap of 100 bp
35117 38963: contig of 3847 bp in 1
38964 39063: gap of 100 km
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                                                                                                                                                                                                                                           soon as it is available and the accession number
                                                                                                                                                                                                                          preserved
/db_xref="taxon:9606"
/chromosome="6"
/clone="RP3-515P18"
/clone_lib="RPCI-3"
                                                                          /organism="Homo sapiens"
                                                                                                             Location/Qualifiers
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                                                                                                                                                    GGAGTGTGCCCAGGCAGCTGCCAAGCACTCCCTCGCCTTCAGGGTCAGAGTGCCCAG
                                                                                                                                                                        gaagcatgcccaggcagctgccacatgtcccctctctggcttcagggacagtgcccagca
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                                                                          CGTTTATCAGAGGCAGCATCCAAGCCCAGAGCCAGTGTCGACTCTTCGGCTGGTGCCTTT
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fragment_chain:1"
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35117. 38963
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fragment_chain:1"
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No. 1.1e-98;
smatches 193;
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RESULT 11
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AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the assembly was confirmed by restriction digest. The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: Em: EMBLE SW:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          requests: clonerequest@sanger.ac.uk
on Mar 12, 2001 this sequence version replaced gi:12832031.
During sequence assembly data is compared from overlapping clones.
Where differences are found these are annotated as variations
together with a note of the overlapping clone name. Note that the
variation annotation may not be found in the sequence submission
corresponding to the overlapping clone, as we submit sequences with
only a small overlap as described above.
                                                                                                                                                                                                                                                                                                                                                                                                                                 chromosome 6, constructed by the Sanger Centre Chromosome 6 Mapping Group. Further information can be found at http://www.sanger.ac.uk/HGP/Chr6 RP3-397H23 is from the library RPCI-3 constructed by the group of Pieter de Jong. For further details see
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (17-MAR-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complete sequence. AL121972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human DNA sequence from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        http://www.sanger.ac.uk/Projects/C_elegans/wormpep This sequence was generated from part of bacterial clone contigs of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence was finished as follows unless otherwise noted: all
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 113202)
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                                                                                                                                                                                                                                                                                                                                                                                           VECTOR: pCYPAC2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       database can be found at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISSPROT; Tr:, TREMBL; Wp:, WORMPEP; Information on the WORMPEP
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                                                                                                                               /note="AluJ/FLAM repeat: matches
260. .570
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                                                                                                                                                                                                                                                                                                                              1. .113202
                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                          /note="MER20 repeat: matches 29.
708. .880
                                                                                                           /note=
                                                                                                                                                                                                                                  map="q12-14.1"
                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                    note="AluSp repeat: matches 120. .292 of consensus"
                                                                                                                                                                                            clone_lib="RPCI-3"
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                                                                                                                                                                                                                                                             /chromosome="6"
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8184. .8488

/note="Allusx repeat: ma

8917. .9176

/note="Allusg1 repeat: n

9212. .9377
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                                                                                                                                                                                                                                                                                                                                                                                                     /note="AluJb repeat: matches 129.6545..6830
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3775. .4074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Single clone region. assembly confirmed
restriction digest data"
complement(2168. .2263)
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/note="Single clone region.
restriction digest data"
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/note="Alux repeat: matches 1.
complement(2112. .2118)
                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="FLAM_A repeat: 6296. .6479
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2795. .2912
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restriction digest data"
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restriction digest data"
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restriction digest data"
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1105. .1428
                  /note="L2 repeat: matches 2575.
10846. .10985
                                                  /note="AluSx repeat: matches 1.
10735. .10778
                                                                                   /note="L2 repeat: matches 2616.
10432. .10734
                                                                                                                                                                                                                                                                                                                                                /note="AluSq repeat:
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6097. .6225
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/note="MIR repeat: matches 53.
                                                                                                                                      /note="AluSx repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                     /note="AluJo repeat: matches 42. .306 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'note="FLAM_C repeat: matches 1.
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.200 of consensus
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                                .2616 of consensus
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                                                                                                                    24680. .24971
/note="Alusc repeat: matches 1.
/25178. .25302
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24322..24622
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21819. 21939
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="AluSp repeat: matches 1.
15266. .15556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13948. .14254
/note="AluSg repeat: matches 1. .305 of consensus"
14255. .14437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11023. .11140
/note="FLAM_C repeat:
12005. .12079
                                                                                                                                                                                                                                                                           /note="MIR repeat: matches 22647. .22943
                                                                                                                                                                                                                                                                                                                                        /note="AluSg/x repeat: matches 134. .310 of 21367. .21670
                                                                                                                                                                                                                                                                                                                                                                      /note="19 copies 2 mer gt 89% conserved"
21084. .21260
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="AluYa5 repeat: 15965. .16082
                                                                                                       /note="AluSg/x repeat: matches 172. .300
                                                                                                                                                                                                                                /note="AluY repeat:
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17790. .18090
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14934. .15229
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Pred. No. 1.2e-98;
0; Mismatches 193;
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REFERENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (05-APR-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On May 12, 2000 this sequence version replaced gi:7417823. All repeats were identified using Pagastus-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Illev, I., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., McIdrim, J., Meneus, L., Mihova, T., Miranda, C., Mlenga, V., Morrow, J., Murphy, T., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Olivar, T.M., Oliver, J., Peterson, K., Pierre, N., Pisani, C., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pollara, V., Rogov, P., Rothman, P., Rogov, P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Roy, A., Santos, R., Schauer, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J. Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Trigillo, J.
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                                                                                                                                                                                                                                                                 runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number wil
                                                                                                                                                                                                                                                                                                                                                                NOTE: This is a 'working draft' sequence. It currently consists of 31 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                            as soon as it
be preserved.
                                                                                                                                                                                                                                                                                                                                         arbitrary.
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t, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: Phrap; version 0.960731
Consensus quality: 134701 bases at least 040
Consensus quality: 141812 bases at least 030
Consensus quality: 144823 bases at least 020
Insert size: 16600; agarose-fp
Insert size: 146597; sum-of-contigs
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Center clone name: 598_G_1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality coverage: 3.6 in Q20 bases; agarose-fp Quality coverage: 4.1 in Q20 bases; sum-of-contigs
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5 3914: gap of
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                                                                                                                                                                                                                                                                                                                                              Gaps between the contigs are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               http://www-seq.wi.mit.edu
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37708 37807: gap of 100 bp
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/1486: contig of 5849 bp

1586: gap of 100 bp

76694: contig of 5108 bp

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82574:
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.20: gap of 100 bp

99034: contig of 8014 bp in length

)134: gap of 100 bp

110324: contig of 11190 bp in length
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54041: contig of 4051 k
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19531: contig of 5390 k
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18823. 21695
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                                                                                             Direct Submission
Submitted (10-MAR-2000) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. MO 63108, USA
On-Apr 28, 2000 this sequence version replaced gi:7582731.
Center project name: H_NH0206H23
                 Center: Washington University Genome Sequencing Center code: WUGSC
Web site:http://genome.wustl.edu/gsc/index.shtml
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HTG; HTGS_PHASE1; HTGS_DRAFT.
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Consensus quality: 141377 bases at least Q40
Consensus quality: 146682 bases at least Q30
Consensus quality: 148842 bases at least Q20
Consensus quality: 148842 bases at least Q20
Insert size: 158000; agarose-fp
Insert size: 158349; sum-of-contigs
Quality coverage: 3.52 in Q20 bases; agarose-fp
Quality coverage: 3.92 in Q20 bases; sum-of-contigs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATGAAATATCACTAGTTGCCAGAATAATAAAATGAACTGTGTTTAATTATGAATAATAT 92949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atctatatacaagataaaattgtactagaaaaattgtgttagatttgtaaggcttgtaat 1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATGTATTTTTATCATGTAACCTCAAAGTGCCTT----CTGTATTGTGTAAGCA 93060
                                              cagtcatggtttccatgcaccctc-tcccttccccttcccagcacactggagtattgcctg
                                                                               CCTCTGAGGGGCTATCAATGTGTAGATAAAGCCCTGAGTAGGCAAGAGCAGTGAGATCCA
                                                                                                                                     CGTTTATCAGAGGCAGCATCCAAGCCCAGAGCCAGTGTCGACTCTTCGGCTGGTGCCTTT
                                                                                                                                                                                         GGAGTGTGCCCAGGCAGCTGCCAAGCACTCCCTCCCTGGCTTCAGGGTCAGAGTGCCCAG
                                                                                                                                                                                                                                                            tttagcctctccacggagctggcagccactgtatcattcagcctggcaacttcactgagg
                                                                                                                                                                                                                                                                                                  TGTTCACTTTCCTCATAAAA-----ATTGTCAGCTCTCTGACACTTAGACCTCAAAC
                                                                                                                                                                                                                                                                                                               tgtacaccttcctcaaaaaattatttgtcatcagcaatccctgacatgtaggtctcaaac
                                                                                                                                                                                                                                                                                                                                                                                                            aggggagttctattta-tttataagaccatacctaaagagatgagctgaaatagaccctt 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtttgctggaacttacaattcagggtcacatatctggctgcaagtcaggcaacccacaat 1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               taatgtatctttgtttatcatgtaacctaaaagtgcctttgatattttaatgtgtaagca 1659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCTATGT -----CTTTTTTTAATTGTACTTGTATTAGATTTTTAAGGCCTATAAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /chromosome="6"
/clone="RP11-206H23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
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75.7%;
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. No. 1.2e-98;
ismatches 193;
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Craniata; Vertebrata; Catarrhini; Hominidae;

Nishi, T.,

Isogai, T.,

Sumio

sequence).
, clone\_lib:COL

clone:COL01253

Euteleostomi;

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RESULT 1
AK024903
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   DEFINITION
                     Locus
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AX118967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
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Best Local Sin
Matches 337;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 actattggagaatggcaaactgttttctgcatcgctgctgctatcaatgtatttggtgcc
                                                                                                                                     ggacacagaaactga 1571
                                                                                                                                                                                        attttcttcacactattcgccaaaggtgaagtgcaaaactgggccatcagtgatcaccaa
                                                                                                                                                                                                                                                                                                                               tttgccactattcctggaattgattgggcccatcattgccagaagtcttacccctgagaac
                                                                                                                                                                                                                                                                                                                                                                                                 atcaaccatctggacattgctccttcgtatgctggtattctcctgggcatcacaaatacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gctgttgcattcctaaccatatcaacaaccctgggaggcttttgctcttctggatttagc 1316
                                                                                                                                                                                                                                                                                                            TTTGCCACTATTCCAGGAATGGTTGGGCCCGTCATTGCTAAAAGTCTGACCCCTGATAAC
                                                                                                                                                                                                                                                                                                                                                                             ATCAACCATCTGGATATTGCTCCTTCGTATGCTGGTATCCTCCTGGGCATCACAAATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCGTTGCTTTCCTAACTATATCAACAACACTGGGAGGCTTTTGCTCTTCTGGATTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATGCAACCTGCAAAAGAAA 92394
                                                                                                                                                                       ATTTTCTTTACACTATTCGCCAAAGGTGAAGTACAAAACTGGGCTCTCAATGATCACCAT
                                                                                                                                                                                                                                          ACTGTTGGAGAATGGCAAACCGTGTTCTATATTGCTGCTGCTATTAATGTTTTTGGTGCC
   Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Proteins and polynucleotides encoding Patent: WO 0129221-A 131 26-APR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 375)
Conklin,D.C. and Yee,D.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 131
AX118967
                   AK024903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZymoGenetics, Inc.
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   sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /notes unnamed protein product"
/codon_start=1
/protein_id="Ca28557.1"
/db_xref="GI:14035922"
/translation="MIGPAVELVAAGEIGCDYSLAVAFLTISTTLGGFCSSGFSINHL
/IFAYAGILLGITNTFATIFGMVGPVIAKSLTPDNTVGEWQTVFYIAAAINVFGAIF
ETLFAKCEYQNWALNDHHGHRH"
a 87 c 79 g 122 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
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 3616 bp cDNA: FLJ21250 fis,
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Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 314.2; DB 6;
Pred. No. 4.1e-61;
0; Mismatches 38;
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WO0129221
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mRNA linear PRI
clone COL01253, highly
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 29-SEP-2000
similar to
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Best Local
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 732
                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                               TATTCAATTTGGGTCAAATGGGCTCCCCCACTGGAAAGGAGTCAACTCACCACCATTGCT
 GGATCAGGGTCAATGCTGGGGGTCCTTCATTGTTCTACTTGCTGGTGGTCTCCTCTGCCAG
                     tatgcaggagcacaacttgggacagtagtttctctttcctctttctggagtaatttgctac
                                                                                     gcccttgttgcactcagggcactagaagggctaggagagggtgtcacatatccagccatg
                                                                                                                                                                                                      TIGITIATTICCTCATTCCTGACCCTCTTCATTCCACTGGCAGCTAATGCGGGAGTGGCC
                                                                                                                                                                                                                        atctttgctacagctatcttcaccctgttcactcccctcgctgcagatttcggagtcgga 569
                                                                                                                                                                                                                                                                                            caaattcctggaggatatgttgccagcagaagtggggggaagctgttgctaggattcggg
                                                                                                                                     TTGCTCATTGTCCTCCGGATTGTACAAGGCATAGCCCAGGTTATGGTATTAACTGGTCAG
                                                                                                                                                                                                                                                                        TGGAGTCCTGAAATCCAGGGAATCATCCTCAGCTCCCTCAACTATGGCTCATTCTTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                 609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NEDO human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (29-AUG-2000) to the DDBJ/EMBL/GenBank databases. Sugano, Institute of Medical Science, University of Tokyo, Laboratory of Genome Structure Analysis, Human Genome Center; Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-8639, Japan (E-mail:cdnal@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286, Fax.81-3-5449-5416)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kawabata,A., Hikiji,T., Kobatake,N., Inagaki,H., Ikema,Y., Okamoto,S., Okitani,R., Ota,T., Suzuki,Y., Obayashi,M., Nishi,T., Shibahara,T., Tanaka,T., Nakamura,Y., Isogai,T. and Sugano,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 3616)
Sugano, S., Suzuki, Y., Ota, T., Obayashi, M.,
Shibahara, T., Tanaka, T. and Nakamura, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NEDO human cDNA sequencing project
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Mammalia; Eutheria; Primates;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AB020527 Homo sapiens mRNA
AK024903
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (2000)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     994
                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="highly similar to AB020527
Na/PO4 cotransporter homolog"
785 c 820 g 1017 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="colon"
/note="cloning vector pME18SFL3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="COL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="COL01253"
                                                                                                                                                                                                                                                                                                                                                                                                                               9.5%;
52.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                             Score 269.6; DB 9;
Pred. No. 8.1e-51;
0; Mismatches 544;
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Science and Technology

Length 3616;

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Homo sapiens mRNA for

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				receptor"		B beta-haemolytic streptococci; SP55; ancer metastases; anglogenesis; injury; scarring; keloid; darthritis; psoriasis; neural injury; antibacterial; anticancer; sory; anti-arthritic; anti-psoriatic; sory; anti-arthritic;							Human brain Na+ de Human sodium-lithi Human haemochromat	Drosophila melanog Drosophila melanog Drosophila melanog	Human breast cance Drosophila melanog Drosophila melanog		Human protein enco DNA encoding novel DNA encoding novel DNA encoding novel Human AFP protein	numan procein enco Human polynucleoti Human cDNA clone r Human cDNA 5'end

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                                                                  relates to a method for preventing or attenuating a patho-angiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used
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301 ctgccaaa          301 ctgccaaa
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The present sequence is the coding sequence for human Anion and Sugar Transporter (AST) protein. AST has significant homology with several members of the anion cation symporter (ACS) family of transporters. AST is implicated in Salla disease, and is useful in screening assays for identifying new drugs. Compounds identified via AST screening is useful for preparing a pharmaceutical suitable as an activator or inhibitor of sialic acid transporter protein. The pharmaceutical may be used in sialiacid associated diseases and CNS/immune related disorders.
                                                                                                                                                                                                                  diagnosing stalic transporter gene
                                                                                                                                                                                                                              New human transporter gene implicated in Salla disease and lysosomal sialic acid transport, useful in assays for identifying new drugs, or diagnosing sialic acid transport defects related to mutations in the
Sequence
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The present cDNA sequence encodes full length human GBS (group B beta haemolytic streptococci) toxin receptor (HPS9). This sequence was clone by using human embryo lung cDNA library as template. Expression vectors comprising this cDNA can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating conditions associated with pathological angiogenesis or neovascularisation (specifically cancer, reperfusion injury, scarring during wound healing, keloids, chronic inflammation (rheumatoid arthritis or psoriasis) or neural injury, and to raise specific antibodies used for treating early onset disease. Inhibitors of this receptor are useful for treating pathological or hypoxia-induced endothelial cell proliferation and
                                                                                                                                                                                                                                                                                                                                         Claim
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  Sequence
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  02-FEB-2000;
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Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, administering group B beta-hemolytic Streptococci toxin receptor o
                                                                                                                                                               WPI; 2001-488844/53.
P-PSDB; AAE06518.
                                                                                                            Disclosure;
                                                                                                                                                                                                    (UYVA-) UNIV VANDERBILT
                                                                                                            Page 41-44;
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The present sequence is a DNA encoding full length human group B betahaemolytic Streptococci (GBS) toxin receptor protein, HP59. The present invention relates to a method for preventing or attenuating a pathonal property of the present invention or an analysis of the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used as vaccines.

Sequence 2930 вP; 729 A; 698 C; 681 G; 822 Η; 0

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DB; AAY45087.
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Query Match Best Local Similarity Matches 1916; Conser

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The invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nuclecutide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is a full length human cDNA of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
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                                               The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat disease of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system disease, such as alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Inmune system suppression, activity heactivity, chemotactic/chemokinetic activity, hamostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
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14-SEP-2000;
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29-NOV-2000;
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                                                                                                                                          antidiabetic; cytostatic; neuroprotective; antidepressant; nootropic; antiparkinsonian; and immunostimulant. The proteins and polynucleotides encoding them can be used in gene therapy, antisense therapy and vaccine production, The proteins and polynucleotides are useful for screening for agonists or antagonists of a protein and for the treatment and diagnosis of disorders associated with the activity of a protein e.g. inflammation, rheumatoid arthritis, septic shock, pancreatitis, cardiac dysfunction, neuropathology, cardiac anaphylaxis, viral, bacterial, HIV and fungal infections, autoimmunity, genetic diseases, haematopoietic disorders, anaemia, platelet disorders, thrombocytopaenia, wounds, burns, ulcers, osteoporosis, severe combined immunodeficiency, eczema, allergic rhinitis, asthma, diabetes, cancer, multiple sclerosis, depression, allergice allergice and proteins and particles and proteins and particles and proteins and particles an
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21-JAN-2000;
25-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAH99166 to AAH99904 encode the human proteins given in AAM25225 to AAM25963. The proteins can have activities based on the tissues and cells they are expressed in, such as: antiinflammatory; antirheumatic; antiarthritic; immunosuppressive; antibacterial; endocrine; cardiant; central nervous system; virucide; anti-HIV; fungicide; antimutagen; cardiovascular; antianaemic; antiaggregant; haemostatic; vulnerary; antiulcer; osteopathic; dermatological; antiallergic; antiasthmatic; antialiartic; cardiovascular; antianaemic; antialiartic; antiasthmatic;
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29-NOV-2000;
                                                                                                    The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system disease, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activity. Drager Syndrome. Other uses include the utilisation of the activity, chemotactic/chemokinetic activity, hemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
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clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence was used as the representative sequence from a human clone which was used in homology searches to identify the clone.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-JUL-1999; 99JP-0194486
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rne invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA, are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is the nucleotide sequence of the 5'-end of a cDNA provided in the invention
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Wakamatsu
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11-JAN-2000;
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2000JP-0118774.
2000JP-0183765.
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### Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length cDNA libraries and normalization Unpublished (2001) Contact: Genoscope AL550137 AL550137 LTI\_NFL006\_PL2 prime, mRNA sequence. AL550137 Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - France Email: segref@genoscope.cns.fr, Web : www Eukaryota; Metazoa; Mammalia; Eutheria; 1 (bases 1 to 985) AL550137.1 GI:12886813 EST. Homo sapiens human. location/Qualifiers Chordata; Primates; 985 bp mRNA linea Homo sapiens cDNA clone Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo. Web : www.genoscope.cns.fr. linear EST 16-FEB-2001 clone CS0DI040YK17 5

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/note="Vector: pcMVSPORT 6; Site\_l: NotI; 1st strand cDNA
/note="Vector: pcMVSPORT 6; Site\_l: NotI; 1st strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco RV sites of the pcMVSPORT 6
vector. Library was normalized. Library was constructed by
Life Technologies. Contact : Feng Liang Life Technologies,
a division of Invitrogen 9800 Medical Center Drive
Rockville, Maryland 20850, USA Fax : (1) 301 610 8371
Email : fliang@lifetech.com URL :
http://fulllength.invitrogen.com"
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/organism="Homo sapiens" /db\_xref="taxon:9606"

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Best Local Sim:
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                  aaagataatagaacgtcctacgagtgtgcagagcattctgctcccataaaagttcttcac
                                                                                 tagctccctgaaggcatcatgaagtccccggtttcggacttagccccgagcgacggcgacggcgacggcgacggcgacggcgacggcgacggcgacggcgacggcgacggcgcacgaacgargacgargacgargacgargacgaagaccaagaccaagaccaagaccaagaccaagaccaagaccaagacgaagacgaagacgaagacgaagacgaa
GAAGATAATAGAACTTCCAAGGCGTGTCCAGAGCATTCTGCTCCCATAAAAGTTCATCAT
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EST.
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Contact: Robert Strausberg, Ph.D.
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Life Technologies, Inc.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
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Location/Qualifiers
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/clone_lib="NIH_MGC_118"
/tissue_type="leukocyte"
/lab_host="DH10B"
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1 (bases 1 to 626)
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602084380F1 NIH_MGC_83 Homo:
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Tissue Procurement: CLONETECH Laboratories, Inc
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Plate: LLCM1067 row: o
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Contact: Robert Strausberg, Ph.D Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Henni
                                                NIH-MGC http://mgc.nci.nih.
National Institutes of Heal
Unpublished (1999)
                                                                                                 Eukaryota; Metazoa; Mammalia; Eutheria; 1 (bases 1 to 801)
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cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLAM11889 row: 1 column: 15
High quality sequence stop: 799.
Location/Qualifiers
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BM106101.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Smith TPL USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BM106101 559 bp mRNA linear 509739 MARC 3BOV Bos taurus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                       Plate: 102 row: K column: 20 Seq primer: ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                            BACKWARD:
                                                                                                                                                                                                                                                                                                                                                                           FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                                               PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                               Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e.\ Vector\ identified\ by\ cross_match\ with\ the\ -minscor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: 402 762 4366
Fax: 402 762 4390
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                                                                                             /note="Vector: pCMV SPORT6; S1te_1: ADDA1; S1te_Library made from pooled tissue from marrow, alv macrophage, ovary, fetal semitendonosus muscle, longissimus muscle."

a 148 c 104 g 154 t
                                                                                                                                                                                                 /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 3BOV"
                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                            GTTTTCCCAGTCACGACG
                     16.7%;
93.1%;
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Score 476; Ub --.
pred. No. 4.7e-77;
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REFERENCE
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RST17674 Athersys RAGE Library i
BG198416
BG198416.1 GI:13720103
EST.
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Creation of genome-wide protein expression libraries using random activation of gene expression
activation of gene expression
Nat. Biotechnol. 19 (5), 440-445 (2001)
                                                                                                                                                      21227151
Contact: Scott J. Cain
Athersys, Inc.
3201 Carnegie Ave, Clev
                                                                                                                                                                                                                                                                                                                                         Mammalia; Eutheria;
1 (bases 1 to 787)
                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                      11 Carnegie Ave,
216 431 9900
216 361 9596
                                                                          l: scain@athersys.com
quality sequence stop:
    Location/Qualifiers
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="Athersys RAGE Library"
/cell_line="HT1080"
                                                                                                                                                      Cleveland,
                                                                                                                                                                                                                                                                                                                                                         Chordata;
Primates;
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RESULT BE869819

Qγ В δ. Вb δÃ Ъ Ωy 망 QΥ DЬ δÃ В δÃ 망 Qy В Qy В QΥ 망 Qy 망 δÃ B Qγ

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                                                                                                                                                                                                                                                                                                                                                gtcaggcaacccacaataggggagttctattta-tttataagaccatacctaaagagatg
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AGGGTCAGAG 772
                           agggacagtg
                                                                                  tggcaacttcactgagggaagcatgcccaggcagctgccacatgtcccctctctggcttc
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                                                                 TGGCAACTGGACTGAGGGGAGTGTGCCCAGGCAGCTGCCAAGCACTCCCTTCCTGGCTTC
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                                                                                                                                                                                                                                                               AGCTGAAACAGACCTCCTGATACCTTTGCTTAATTAAACTAGATGATAATTCTCAGGTAC
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http://image.llnl.gov
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Tissue Procurement: ATCC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1999)
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/clone_lib="NIH_MGC_65"
/clone_lib="NIH_MGC_65"
/tissue_type="adenocarcinoma"
/lab_host="DH10B (phage-resistant)"
/note="organ: colon; Vector: pCMV-SPORT6; Site_1: S1te_2: Sall; Cloned unidirectionally. Primer: Ol Average insert size 1.8 kb. Library constructed Technologies. "
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Plate: LLAM12008 row: m column: 21
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Tissue Procurement: DCTD/DTP
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Contact: Robert Strausberg,
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National Institutes of Health, Mammalian
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/lab_host="DH10B (phage-resistant)"
/note="organ: breast; Vector: pCMV-SPORT6; Site_1: NotI,
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.383 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NHH_MGC Library."
                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:5395772"
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106847 MARC 1BOV BOS taurus cDNA
AW655673 GI:7421499
EST.
           FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 80 row: O column: 16
                                                       Email: smith@email.marc.usda.gov
Single pass sequencing. Bases cai
v0.980904.e. Vector identified by
and minmatch 12 options.
                                                                                                                  Tel:
                                                                                                                                                                           Sequence evaluation of four pooled-tissue normalized bovine libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                      Smith,T.P.L., Grosse,W.M., Freking,B.A., Roberts,A.J., Stone,R.T., Casas,E., Wray,J.E., White,J., Cho,J., Fahrenkrug,S.C., Bennett,G.L., Heaton,M.P., Laegreid,W.W., Rohrer,G.A., Chitko-McKown,C.G. Pertea,G., Holt,I., Karamycheva,S., Liang,F., Quackenbush,J. and
                                             PCR PRimers
                                                                                                                             USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, U
                                                                                                                                                    Contact: Smith TPL
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Matches 492;
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B1697765
B1697765.1 GI
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                             BI697765 711 t
603346858F1 NCI_CGAP_Mam2 Mus
                                                             Mammalia; Eutheria;
1 (bases 1 to 711)
                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Euthe<u>ria;</u> Rodentia; Sciurognathi; Muridae;
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139 c 103 g 139 t 1 others
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/db_xref="taxon:9913"
/clone_lib="MARC 1BOV"
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/lab_host="DH108"
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92.3%;
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/clone_lib="NCI_CGAP_Mam2"
/tissue_type="tumor, biopsy
/dev_stage="5_months"
/lab_host="DH10B"
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191 c 199 g 174 t
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Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
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National Institutes of Health, I
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/clone=lib="NIH_MGC_84"
/tissue_type="adrenal cortex carcinoma, cell line"
/lab_host="DH10B (phage-resistant)"
/note="Organ: adrenal gland; Vector: pCMV-SPORT6; Site_1:
NotI; Site_2: SalI; Cloned unidirectionally; oligo-d"
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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                Tel: 402 762 4366
Fax: 402 762 4390
Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and alt_trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore
                                                                                                                                                                                                                  Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 477)
Smith, T.P. L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G., Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and Keele, J.W.
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Seq primer: ATTTAGGTGACACTATAG.
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                                                                                                                                                                                                                                                              caagtcctgtgttct 2419
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                                                                                                                                                                                                                                                                                                                                                    CCCAGC --
                                                                                                                                                                                                                                                                                                                                                                GAGCCAACAGGGACAACTCGATCCACAGTCATGATTTCCATGCACCCTCTCCCTTCCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                 gagccaacagggacagcgatccacagtcatggtttccatgcaccctctccctt
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCATCAGCAATCCCTGACACATAGGTCTCAAACTTTAGCCTCTTGACGTAGCTGGCAGC
                                                                                                                                                                                                                                                  CAAGTCCTGTGTTCT
                                                                                                                                                                                                                                                                                                   AGCCACATATAACATCATCCTTGATGATCCTACCTTCACATGGATCAGAGTATAAATCTT
                                                                                                                         BF124137
BF124137.1
EST.
Mammalia; Eutheria; Rodentia; Sciurognath
1 (bases 1 to 904)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                               Mus musculus
                                                                                                                                                                      BF124137
601760838F1 NCI_CGAP_Mam5
                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                            house mouse.
                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from marrow, alveolar macrophage, ovary, fetal semitendonosus muscle, and fetiongissimus muscle."

134 c 93 g 129 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 3BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15.0%;
93.5%;
                                                                                                                                                                                                                                                  477

 Mismatches

                                                                                                                                                                                                                                                                                                                                                   -GCATGTAATCTGCAAAAGAAAGTGTGATGCCTAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 426.6; DB Pred. No. 5.1e-68
                                                                                                                                                                     904 bp mkna
Mus musculus
                                                                                                                                                                                      mRNA
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A clone
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                                     Collection
                                                                                                                                                                         EST 24-OCT-2000
IMAGE:4024064 5',
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                                                                        Euteleostomi;
; Murinae; Mus
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Tissue Procurement:

Lothar Hennighausen

Ph.D.,

Robin

Humphreys

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BASE COUNT
ORIGIN
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Best Local S
Matches 558
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                                                                                                                                                                                                                                                                           ctcggaccgcacaccgctcctgcagcgcgccccgcgggggggaacccgctccagtatgctg 190
caagcttctgagtatttcatatgcaggagcacaacttgggacagtagtttctcttcctct
                                                                           tgtcacatatccagccatgcatgccatgtggtcttcatgggctccccctcttgaaagaag
                                                                                                                              CGCAGACTTAGGCGTGGTGACTCTCGTTGTGCTTAGAGCGCTGGAAGGACTGGGAGAGGG
                                                                                                                                                   tgcagatttcggagtcggagcccttgttgcactcagggcactagaagggctaggagaggg
                                                                                                                                                                                                      GCTGCTGGGGCCTGGGCATCTTAGGCACCTCCGTCTTCACCCTGTTCACACCGCTGGC
                                                                                                                                                                                                                         gctgttgctaggattcgggatctttgctacagctatcttcaccctgttcactcccctcgc
                                                                                                                                                                                                                                                                                                                                                                                                                           acgggtgaatctgagcgttgcactagtggacatggtggattcaaacacaactgccaaaga 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctctgctcgttacaacctagcatttttgtcctttttttggtttcttcgttctctattcatt 250
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                                                        TGTTACGTTTCCAGCTATGCACG-CATGTGGTCTTCCTGGGCTCCCCCTCTGGAAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCTGCTCGGTACAACTTAGC-GATTTGGCGTTCTGTGGTTTCTTCGTTCTCTATGCCTT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM9283 row: k column: 09
High quality sequence stop: 680.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sal
Site_2: NotI; Cloned unidirectionally. Primer: Oligo d'
Library constructed by Life Technologies. Investigators
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="NCI_CGAP_Mam5"
/tissue_type="tumor, gross tissue"
/dev_stage="7 months"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Mus musculus"
/strain="C57/B6"
/db_xref="taxon:10090"
/clone="IMAGE:4024064"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     providing samples: Lothar Hennighausen/Robin Humphreys,
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78.8%;
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Pred. No. 3.8e-66;
0; Mismatches 145
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KEYWORDS
SOURCE
ORGANISM
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VERSION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
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260
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             tctattcattacgggtgaatctgagcgttgcactagtggacatggtggattcaaacacaa
                                                            gcgaggagggctcggaccgcacaccgctcctgcagcgcgccccgcgggggggaacccgctc
                                                                                                                                                                                                                                                                             cccggggggcggggcttcggcggtcccgctggagctctctttttccgcggagcaggtttg
                                                                                                                                                                                                            cgccgtagctccctgaaggcatcatgaagtccccggtttcggacttagccccgagcgacg
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TGTATGCATTACGTGTGAATCTGAGTGTTGCGTTAGTGGATATGGTAGATTCAAATACAA
                                                                                                                               GCGAGGAGCACGGACCGCACGCCTCTTCTACCGGGCCCCACGGGCCGAAGCCGCTC
                                                                                                                                                                                             ACACCT - - GCTCACGTAGGCGTCATGAGGTCTCCGGTTCGAGACCTGGCCCGGAACGATG
                                                                                                                                                                                                                                                            CGCTCGGCCGGGGGCTTCGGGGCTGTCGGGCCGCTCCCTTCTCTCCCAGGTGGCGAGT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
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BE867611
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     found through the I.M.A.G.E. Consortium/LLNL http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mammalia; Eutheria;
1 (bases 1 to 676)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                             145
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                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/olyanism="Homo sapiens"
/olyanism="Homo sapiens"
/olone="TwagE:3847279"
/olone_lib="NHH_MGC_65"
/tissue_type="adenocarcinoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: colon; Vector: pcMV-SPORT6; Site_1: Not Site_2: Sall; Cloned unidirectionally. Primer: Oligo Average insert size 1.8 kb. Library constructed by Technologies. "
                                                                                                                                                                                                                                                                                                                                                                                                                      Technologies. "
171 c 184 g
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Primates;
                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                         Score 413.8; DB 10;
Pred. No. 1e-65;
0; Mismatches 127;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mammalian Gene Collection (MGC)
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                                                                                                                                                                                                                                                                                                          Veterinary PathoBiology University of Minnesota
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NotI; Site_2: SalI; Tissue was taken from the front
occipital, temporal and parietal lobes, olfactory
hippocampus, cerebellum, thalamus, hypothalamus, m
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                                                                                                                                                                                                        /organism="Canis familiaris"
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Query Match 34.8%; Score 987; DB 2; Length 493; Best Local Similarity 39.7%; Pred. No. 8.2e-71; Matches 194; Conservative 94; Mismatches 179; Indels

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A;Cross-references: E
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C;Keywords: transmemb
brain specific Na+-dependent inorganic phosphate cotransporter C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Uul-1996 #sequence_revision 02-Uul-1996 #text_change C;Accession: I59302
R;Ni, B.; Rosteck, P.R.; Nadi, N.S.; Paul. S M
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C;Species: Caenorhabditis elegans
C;Date: 12-Mar-1993 #sequence_revision 12-Mar-1993 #tex
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submitted to the EMBL Data Library, December 1992
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                                                                                                                                                 VLWLTAGILTIGALLFSIFASGEVQPWAKLTAEEGH
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Pred. No. 3.1e-69;
7; Mismatches 172
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sodium/phosphate transport protein, renal rabbit N;Alternate names: sodium/phosphate cottansporter C;Species: Oryctolagus cuniculus (domestic rabbit) C;Date: 21-Jul-1995 #sequence_revision 21-Jul-1995 C;Accession: A56410; S27951
R;Werner, A; Moore, M.L.; Mantei, N.; Biber, J.; Sproc. Natl. Acad. Sci. U.S.A. 88, 9608-9612, 1991
A; Residues: 1-465 < A; Cross-references: C; Keywords: kidney;
                                                      A; Status: preliminary A; Molecule type: mRNA
                                                                                             A; Accession: A56410
                                                                                                          A; Title: Cloning and expression A; Reference number: A56410; MUII
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A; Residues: 1-560 < RES>
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A;Title: Cloning and expression of a cDNA encoding a brain-specific Na(+)-dependent i A;Reference number: 159302; MUID:94261635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Cross-references:
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 GB:M76466; NID:g165689; transmembrane protein
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8, 9608-9612, 1991
of cDNA for a Na/
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C;Accession: S69915
R;Chong, S.S.; Kozak, C.A.; Liu, L.; Kristjansson, K.; Dunn, S. Am. J. Physiol. 268, 1038-1045, 1995
A;Title: Cloning, genetic mapping, and expression analysis of a A;Reference number: S69915
A;Accession: S69915
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-465 <CHO>
A;Cross-references: EMBL:X77241; NID:g887522; PIDN:CAA54459.1;
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                                                                       VLLVSGFICDLLGWPMVFYIFGIVGCVLSLSWFFLFFDDPKDHPYMSSSEKDYIISSLMQ
                                                                                                                  SLPLSGIICYYMNWTYVFYFFGTIGIFWFLLWIWLVSDTPQKHKRISHYEKEYILSSLRN
                                                                                                                                                                                                                TPIAADLGVGPLIVLRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVI
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C;Function:
A;Description: is necessary for glutamatergic neurotransmission
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SKHG-WTSVFLLASLIHFTGVTFYAVYASGELQEWA
                                          NTVGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNWA
                                                                                              TAIMALIAAVGMSGFAISGFNVNHLDIAPRYAAILMGFSNGIGTLAGLTCPFVTEAFTAH
                                                                                                                    LAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMVGPVIAKSLTPD
                                                                                                                                                                                       AAIPHLVMGCVVLMGGQLADYLRSNKILSTTAVRKIFNCGGFGGEAAFMLIVAYTTSD-T
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No. 1.7e-56;
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                 Genomics 18, 355-359, 1993
A;Title: Molecular cloning of the cDNA encoding
A;Reference number: A48916; MUID:94117004
A;Accession: A48916
                                                                                                      sodium phosphate transport protein 1, 1
C;Species: Homo sapiens (man)
C;Date: 20-reb-1995 #sequence_revision
C;Accession: A48916
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A48916
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A;Rote: see websites genome wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_el. A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; an
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A; Residues: 1-576 <STO>
                                                                      R;Chong, S.S.; Kristjansson, K.;
Genomics 18, 355-359, 1993
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preliminary
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                                                                                                                                                                                                                                                             SKHG-WTSVFLLASLIHFTGVTFYAVYASGELQEWA
                                                                                                                                                                                                                                                                                                                                  TAIMALIAAVGMSGFAISGFNVNHLDIAPRYAAILMGFSNGIGTLAGLTCPFVTEAFTAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RNQLSSQKSVPWVPILKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEILRFNVQENGFL : :|:|| | : ::| |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YGFKVKSDYLVAFIQITQGLVQGVCYPAMHGVWRYWAPPMERSKLATTAFTGSYAGAVLG
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                                                                                                                                                                                                                                                                                               NTVGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNWA 527
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IAADLGVGPLIV-LRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVIS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRKRWLLAILANMGFMISFGIRCNFGAAKTHMYKNYTD--
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                                                                                         zoghbi,
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Pred. No. 1.8e-56;
8; Mismatches 176;
                                                                                                                                                                  renal -
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                                                                                       H.Y.; Hughes,
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                                                       sodium
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A; Experimental source: C; Genetics:

position:

CESP: K10G9.1

A; Cross - references:

EMBL: 248055; clone

PIDN:CAA88135.1; GSPDB:GN00021; CESP:K10G9

A;Status: preliminary; translated A;Molecule type: DNA A;Residues: 1-573 <WIZ>

from

GB/EMBL/DDBJ

A; Reference number: A; Accession: T24636

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hypothetical protein K10G9.1 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #t. C;Accession: T23589; T24636
submitted to the EMBL Data A; Reference number: Z19915
                                                                                         A; Molecule type: DNA
A; Residues: 1-573 <WIL>
                                                                                                                                             A; Reference number: A; Accession: T23589
                                                                                                                                                            submitted to the EMBL Data Library, A; Reference number: Z19765
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A;Cross-references: GDB:141889;
A;Map position: 6p23-6p21.3
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A; Residues: 1-467 < CH
                                     R; Buck,
                                                                        A;Cross-references: EMBL:Z36282; PIDN:CAA85289.1; GSPDB:GN00021; CESP:K10G9.1
                                                                                                                           A; Status: preliminary; translated
                                                                                                                                                                                                    R; Mortimore, B.
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                                                      A; Experimental source: clone
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LSSLPYLGSWLCMILSGQAADNLRAKWNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDY
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                                                                                                                                                                                                                                                                                                                                                                                               ----PDNTVGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNWALNDHH
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s: GB:X71355;
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                Library,
                                                        K10G9
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Pred. No. 4.6e-56;
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                                                                                                                                                                                 August 1994
                    February
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Na+-dependent phosphate cotransporter - human
C:Species: Homo sapiens (man)
C:Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 05-Nov-1999
C:Accession: 139473
R;Miyamoto, K.; Tatsumi, S.; Sonoda, T.; Yamamoto, H.; Minami, H.; Taketani, Y.; Takeda, Biochem. J. 305, 81-85, 1995
A;Title: Cloning and functional expression of a Na(+)-dependent phosphate co-transporter A;Reference number: 139473; MUID:95126933
A;Ression: 139473
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-465 <RES>
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A;Cross-references: GB:D28532; NID:g639841; PIDN:BAA05888.1; PID:g639842
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Best Local Similarity
Matches 177; Conser
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                       LLIPPAAGIGVAWVVVCRAVQGAAQGIVATAQFEIYVKWAPPLERGRLTSMSTSGFLLGP
                                                                                                                                                       KVHHNQTGKKYQWDAETQGWILGSFFYGYIITQIPGGYVASKIGGKMLLGFGILGTAVLT
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A; Accession: T24633
A; Status: preliminary; translated fi A; Molecule type: DNA A; Molecule type: DNA A; Residues: 1-544 <WIL>A; Cross-references: EMBL: Z48055; PII A; Experimental source: clone T07A5 C; Genetics:
A; Genetics:
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R;Buck, D.
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:Introns: 38/3; 87/3; 272/3; 322/3; 444/3; 476/3; 496/1;
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A; Gene:
A; Map po
                 protein F25G6.7 [imported] - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change
C;Accession: B89135
R;anonymous, The C. elegans Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein At2g29650 [imported] - Arabidopsis thaliana (c;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001 C;Accession: H84698
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A; Residues: 1-512 <STO>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y. M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, Nature 402, 761-768, 1999
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Science
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Best Local
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                                                                                                                                                                                             SWDDVFTISVGLYLVGTVIWNLFSTGE
                                                                                                                                                                                                                             EWQTVFYIAAAINVFGAIFFTLFAKGE
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Pred. No. 1.1e-51;
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.....s-references: EMBL:AF013293; NID:g2252823; A;Experimental source: cultivar Columbia C;Genetics:

PID:g2252847

A; Molecule type: DNA A; Residues: 1-413 < AND>

A; Status: translated from GB/EMBL/DDBJ

A;Map

R;Andrews, S.

R;Andrews, S.

submitted to the EMBL Data Library, July 19
submitted to the EMBL Data Library, July 19

A; Description: The sequence A; Reference number: Z14347

A; Accession: T01534

hypothetical protein A\_IG005I10.nn - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 19-Feb-1999 #sequence\_revision 19-Feb-1999 #text\_C;Accession: T01534

#text\_change 17-Mar-2000

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A;Title: Genome sequence of the nematode C. elegans: a platform for investigating bio A;Reference number: A75000; MUID:99069613; PMID:9851916
A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; A;Accession: B89135
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-501 <STO>
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A;Map po
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C;Genetics:
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                                                                                 QNWA 527
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                                                                                                                      GAVTGFTFFFVAVSGIIHPIITKMIVKDRTAAEWNLVFYISTVIAIFPIIIFNVWGSTEV
                                                                                                                                                                                           -KVLNSIGSIGLGVFLLAATFLDNEHAWMAVLFLCLSMASAGLHTPGCQLALVSVAPAYS
                                                                                                                                                                                                           RRIFSLIGMIGPAVFLVAAGFIGCDYS-LAVAFLTISTTLGGFCSSGFSINHLDIAPSYA
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153; Conserv
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smatches 191;
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**A**) 1

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hypothetical protein F13112.30 - Arabidopsis thaliana (Species: Arabidopsis thaliana (mouse-ear cress) (Species: Arabidopsis thaliana (mouse-ear cress) (C;Date: 04-Feb-2000 #sequence_revision 04-Feb-2000 #text_change 04-Feb-2000 C;Accession: T45634 R;Cholsne, N; Robert, C.; Brottier, P.; Wincker, P.; Cattolico, L.; Artiguenave, F.; submitted to the Protein Sequence Database, November 1999 A;Reference number: Z23010 A;Accession: T45634 A;Accession: T45634
                                                                                                                                                                                                                                                               A; Map position: 3
A; Introns: 35/2; 153/3; 229/2; 350/3; 399/3; 445/3; 457/1
A; Note: F13I12.30
                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-537 <CHO>
A;Cross-references: EMBL:AL133292
A;Experimental source: cultivar Columbia; BAC clone F13I12
C;Genetics:
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ŏ	/6	/6 HRLRVSCSDARRIFEETAAELTAQPNESEFITSERVKVVAMLA-LALALCNADRVVMSVA 134
Ϋ́	105	LVDMVDSNTTLEDNRTSKACPEHSAPIKVHHNQTGKKYQWDAETQGWILGSFFYGYIITQ 164
ŏ	135	IVWSKSFSGIVQSSFLMGYLISP 164
γ	165	IPGGYVASKIGGKMLLGFGILGTAVLTLFTPIAADLGVGPLIVLRALEGLGEGVTFPAMH 224
ŏ	165	IAGGTLVDRYGGKVVMAWGVALWSLATFLTPWAADSSLWALLAARAMVGVAEGVALPCMN 224
У	225	AMWSSWAPPLERSKLLSISYAGAQLGTVISLPLSGIICYYMNWTYVFYFFGTIGIFWFLL 284
ŏ	225	NMVARWEPPTERSRAVGIAMAGFQLGNVVGLMLSPILMSQGGIYGPFVIFGLSGFLWLLV 284
Эy	285	WIWLVSDTPQKHKRISHYEKEYILSSLRNQLSSQKSV-PWVPILKSLPLWAIVVA 338
ŏ	285	WLSATSSAPDRHPQITKSELEYIKQKKQISTMENKRISTSGIPPFGRLLSKMPTWAVIVA 344
γ	339	HFSYNWTFYTLLTLLPTYMKEILRENVQENGFLSSLPYLGSWLCMILSGQAADNLRA 395
ŏ	345	NSMHSWYYHVNLKQAAWFSAVPWSMMAFTGYIAGFWSDLLI 385
γ	396	KWNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYSL-AVAFLTISTTLGGFCSSGFSIN 454
ŏ	386	RRGTSITLTRKIMQSIGFIGPGIALIGLTTAKQPLVASAWLSLAVGLKSFSHLGFLIN 443
γ	455	HLDIAPSYAGILLGITNTEATIPGMVGPVIAKSLTPDNTVGEWQTVFYIAAAINVFGAIF 514
ъ	444	LQEIAPEYSGVLHGMCLTAGTLAAIVGTVGAGFFVELLGSFQGFILLTAILYLLSALF 501
γ	515	FTLFAKGE 522
ŏ	502	NITATGE 509

Search completed: July 15, 2002, 08:22:58 Job time: 43 sec

91)

# GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on:

July 15, 2002, 08:22:15; Search time 17.92 Seconds (without alignments) 1158.129 Million cell updates/sec

Title: Perfect score: Sequence:

US-09-776-865-2
2836
1 MAAGAMTPPRPVQPARPGGF.....LFAKGEVQNWALNDHHGHRH 536

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

105224 seqs, 38719550 residues

Searched:

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database : SwissProt\_40:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

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# ALIGNMENTS

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NSI	Eukaryota; Metazoa; I Rhabditidae; Peloder NCBL_TaxID-6239; [1] SEQUENCE FROM N.A. STRAIN=BRISTOL N2; MEDLINE-94150718; Pul Wilson R., Ainscough Bonfield J., Burton; Craxton M., Dear S., Fulton L., Jones M Latreille P., Lightn Parsons J., Percy C., Sims M., Smaldon N., Sulston J., Thierry-1 Waterston R., Watson Wallston J., Thierry-1 Waterston R., Watson Wohldman P.; "2.2 Mb of contiguous elegans."; Nature 368:32-38(199, [2] Nature 368:32-38(199, [2] Natur	LLT 1  _CAEEL  YLD2_CAEEL  Q03567;  Q1-FEB-1994 (R  01-NOV-1997 (R  01-MAR-2002 (R  Hypothetical 5  C38C10.2.  Caenorhabditis
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ranspor: sport; pore pore	Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditidae; Peloderinae; Caenorhabditis.  NCBI_TaxID=6239; [1] SEQUENCE FROM N.A. STRAIN=87370L N.2. STRAIN=87370L N.2. STRAIN=87370L N.2. MEDLINE-94150718; PubMed=7906398; MEDLINE-94150718; PubMed=7906398; MEDLINE-94150718; PubMed=7906398; MILSON R., AINSCOUGH R., ANDERSON K., Baynes C., Berks M., Wilson R., AINSCOUGH R., ANDERSON K., COPSEY T., COUPSEY T., COULSON A., Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A., Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M., Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N., Fulton L., Jones M., Kershaw J., Kirsten J., Laisster N., Fareille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M., Farsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R., Farsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R., Sins M., Smaldon N., Smith A., Smith M., Sonnhammer E., Staden R., Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J., Waterston R., Watson A., Weinston R., Waterston R., Waterston R., Waterston	RD; PRT; 4 Created) Last sequence up Last annotation protein C38C10.2
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Glycopr	d=7906398; d=7906398; Anderson K., Baynes C., Berks M., Connell M., Copsey T., Cooper J., Couls, Connell M., Copsey T., Hillier L., Jier M. Connell M., Kirsten J., Laisster N., Green P., Hawkins T., Hillier L., Jier M. Kershaw J., Kirsten J., Laisster N., J., Lloyd C., Mortimore B., O'Callaghan Ifken L., Roopra A., Saunders D., Staden J., Laisster N., J., Lloyd C., Mortimore B., O'Callaghan Ifken L., Roopra A., Saunders D., Staden J., Thomas K., Vaudin M., Vaughan K., J., Thomas K., Vaudin M., Vaughan K., Weinstock L., Wilkinson-Sproat J., Weinstock L., Wilkinson-Sproat J., Weinstock L., Wilkinson-Sproat J., Weinstock L., Wilkinson-Sproat J., Weinstock L., Wilkinson and the EMBL of LIAN SODIUM/PHOSPHATE COTRANSPORTER 1. Copyright. It is produced through a collutate of Bioinformatics and the EMBL of that is not removed. Usage by and for ment is not removed. Usage by and for ense@isb-sib.ch).	omosome II
w	Rhabditida; Rhabditoidea;  Sc., Berks M.,  T. Cooper J., Coulson A.,  Ilo A., Fraser A.,  , Hillier L., Jier M.,  J. Laisster N.,  saunders D., Shownkeen R.,  Saunders D., Shownkeen R.,  for the first of C.  Te Cooransport J.,  rom chromosome III of C.  sprotein (Fotential).  rorm chromosome III of C.  rom chromosome III of C.  rom chromosome III of C.  sprotein (Fotential).  rorm chromosome III of C.  rom chromosome III of C.  rom chromosome III of C.  sprotein (Fotential).  rom chromosome III of C.  rom chromosome III of C.  rom chromosome III of C.  sprotein (Fotential).  rom chromosome III of C.  rom chromosome III of C.	H
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01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
18-JUL-1998 (Rel. 36, Last annotation update)
Renal sodium-dependent phosphate transport protein 1 (Sodium/phosphate cotransporter 1) (Na(+)/PI cotransporter 1) (Renal sodium-phosphate transport protein 1) (Renal Na(+)-dependent phosphate cotransporter 1) (NAPI-1).
SEQUENCE FROM N.A
TISSUE=Kidney cort
MEDLINE=92052140;
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Eukaryota; Metazoa;
Mammalia; Eutheria;
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Proc. Natl. Acad. Sci. U.S.A. 88:9608-9612(1991).

Proc. Natl. Acad. Sci. U.S.A. 88:9608-9612(1991).

Proc. Natl. Acad. Sci. U.S.A. 88:9608-9612(1991).

ACTEVELY TRANSPORTION THE RESORPTION OF PHOSPHATE NAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE NAY COTRANSPORT IN THE REAL BRUSH BORDER MEMBRANE.

-1- SUBCELLULAR LOCATION: Integral membrane protein.

-1- TISSUE SPECIFICITY: KIDNEY CORTEX AND LIVER.
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Am. J. Physiol. 268:F1038-F1045(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chong S.S., Kozak C.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Renal sodium-dependent phosphate transport protein 1 (Sodium/phosphate cotransporter 1) (Na(+)/PI cotransporter 1) (Renal sodium-phosphate transport protein 1) (Renal Na(+)-dependent phosphate cotransporter
                                                                                                                                                                                                                                                                                                                          Transport;
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION: IMPORTANT FOR THE RESORPTION OF PHOSPHATE MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE NA+ COTRANSPORT IN THE RENAL BRUSH BORDER MEMBRANE.
SUBCELLULAR LOCATION: Integral membrane protein.
                                                          PVCCSARYNLAILAFFGFFIVYALRVNLSVALVDMVDSNTTLEDNRTSKACPEHSAPIKV 133
                                                                                                                                                                                                                                                                                                                                                             MGI:103209;
                     HHNOTGKKYOWDAETQGWILGSFFYGYIITQIPGGYVASKIGGKMLLGFGILGTAVLTLF
LDNVKNPVYSWSPDIQGLILSSVFFGMVVVQAPVGYLSGIYPMKRIIGSSLFLSSLMSLL
                                             PGFCSFRYGLAILLHFCNIAIMAQRVCLNLTMVAMV
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and this statement is not removed
requires a license agreement (See
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                  WormPep; ZK512.6; CEI
InterPro; IPR003667
                                                                                                                                                                                                                                                                                                         Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.,
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Jatreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Ropera A., Saunders D., Shownkeen J.
Sims M., Smaldon N., Smith A., Sonnhammer E., Staden R.,
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
               Pfam; PF00083; sugar_tr; 1
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-!- SUBCELLULAR LOCATION:
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15-JUL-1998 (Rel. 36, Last annotation update)
Renal sodium-dependent phosphate transport protein 1 (Sodium/phosphate cottransporter 1) (Na(+)/PI cotransporter 1) (Renal sodium-phosphate transporter 1) (Renal Na(+)-dependent phosphate cotransporter
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Eukaryota; Metazoa;
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 TISSUE-Liver;
MEDLINE-97021433;
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Da; Chordata;
ia; Rodentia;
 PubMed=8867793;
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Murinae; Rattus
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Best Local Similarity
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differential tissue expression of transcripts.";
Cell. Mol. Biol. Res. 41:451-460(1995).
Cell. Mol. Biol. Res. 41:451-460(1995).
INDOTION: IMPORTANT FOR THE RESORPTION OF PHOSPHATE IN THE NEW BRONDER MEMBRANE IN THE RENAL BRUSH BORDER MEMBRANE.

NA+ COTRANSPORT IN THE RENAL BRUSH BORDER MEMBRANE.

-i- SUBCELLULAR LOCATION: Integral membrane protein.
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between
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
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ween the Swiss Institute of Bioinformatics and the EMBL outst
Buropean Bioinformatics Institute. There are no restrictions
by non-profit institutions as long as its content is in
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QDPEYAWHKNEFLMAGINVTCLAFYLLFAKGDIQDWA
                                                                           LSSLPYLGSWLCMILSGQAADNLRAKWNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDY
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                             DNTVGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNWA
                                                                                                                         MQQVHSGRQSLPIKAMLKSLPLWAIILNSFAFIWSNNLLVTYTPTFISTTLHVNVRENGL
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Pred. No. 1.4e
)1; Mismatches
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28BBBF8DC5COAC52 CRC6
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1.4e-51;
as 183;
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457
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Pfam; PF00083;
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                                                                                                                                                                                                                                                                                                                                                                               EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Miyamoto K.-I., Tatsumi S., Sonoda T., Taketani Y., Takeda E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. TISSUE-Kidney cortex;
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Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=95126933; PubMed=7826357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chong S.S., Kristjansson K., Zoghbi H.Y. "Molecular cloning of the cDNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=94117004;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FUNCTION: IMPORTANT FOR THE RESORPTION OF PHOSPHATE BY THE KIDNI MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE INTO CELLS V NA+ COTRANSPORT IN THE RENAL BRUSH BORDER MEMBRANE.

SUBCELLULAR LOCATION: Integral membrane protein.

TISSUE SPECIFICITY: EXPRESSED IN KIDNEY CORTEX, LIVER AND BRAIN
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D28532; BAA05888.1;
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40, Last annotation
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                                                                                                                                                                                                                                                                                                                         sub_transporter.
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NA encoding a human renal
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16-OCT-2001
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SEQUENCE
                                                  use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                               CAEEL
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STRAIN-BRISTOL N2;
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                                                                                                         ween the Swiss Institute of Bioinf
European Bioinformatics Institute
                                                                                                                                                       mitted (FEB-1995) to the EMBL/GenBank/DDBJ databases.
SUBCELLULAR LOCATION: Integral membrane protein (Potential).
SIMILARITY: TO MAMMALIAN SODIUM/PHOSPHATE COTRANSPORTER 1.
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(Rel. 40, Last annotation update)
1 60.5 kDa protein T07A5.3 in chromosome
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000624;

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Sodium-corter 3) (Na(+)/PI cot
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(Human).

Metazoa; Chordata; 
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15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Sodium-dependent phosphate transport protein cotransporter 4) (Na(+)/PI cotransporter 4).
SLC17A4 OR NPT4.
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"A 1.1-Mb transcript map of the hereditary hemochromatosis locus.";
Genome Res. 7:441-456(1997).
-i-FUNCTION: MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE
INTO CELLS VIA NA+ COTRANSPORT (BY SIMILARITY).
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U90544; AAB53422.1;
port; Transmembrane;
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N-LINKED (GLCNAC. ..) (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RUGURY D.A., Kronmal G.S., Lee V.K., Mintier G.A., Quintana L., Domingo R. Jr., Meyer N.C.; Irrinki A., McClelland E.E., Fullan A., Mapa F.A., Moore T., Thomas W., Loeb D.B., Harmon C., Tsuchihashi Z Wolff R.K., Schatzman R.C., Feder J.N.; "A 1.1-Mb transcript map of the hereditary hemochromatosis locus."; Genome Res. 7:441-456(1997).
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Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EB Thronogen Bioinformatics Thomas are no roots
                                                                                                                                  NQL-SSQKSVPWVPILKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEILRFNVQENGFL
                                                                                                                                                                  TAILIGGFISETLGWPFVFYIFGGVGCVCCLLWFVVIYDDPFSYPWISTSEKEYIISSLK
                                                                                                                                                                                   ISLPLSGIICYYMNWTYVFYFFGTIGIFWFLLWIWLVSDTPQKHKRISHYEKEYILSSLR
                                                                                                                                                                                                                                                       FTPIAADLGVGPLIVLRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAGAQLGTV
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               LAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMVGPVIAKSLTPD
                                            SALPFIVAWVIGMVGGYLADFLLTK-KFRLITVRKIATILGSLPSSALIVSLPYLNSGYI
                                                                        SSLPYLGSWLCMILSGQAADNLRAKWNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYS
                                                                                                      QQVGSSKQPLPIKAMLRSLPIWSICLGCFSHQWLVSTMVVYIPTYISSVYHVNIRDNGLL
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                                                                                                                                                                                                                            --PAKSSI-----LG-----GQFAIWEKWGPPQERSRLCSIALSGMLLGCF
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Metazoa; Chordata; C
Metazoa; Primates; (
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Pred. No. 9.5e
86; Mismatches
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i; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                              156;
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Query Match Best Local Similarity

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Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulso
Craxton M., Dear S., Du Z., Durblin R., Favello A., Fraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownke
Sims M., Smaldon N., Smith M., Sonnhammer E., Staden R
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sulston J., Thier.,
Sulston R., Watson A.,
                                                                                                                                                                                                                                                                            Hypothetical 
Sodium transp
                                                                                                                                                                                                                                                                                                                                                           PIR; S44742; S44742.
WormPep; C02C2.4; CE00030.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institutions as modified and this statement is not re
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=BRISTOL N2;
MEDLINE=94150718; PubMed=7906398;
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Eukaryota; Metazoa; Nem
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01-MAR-2002
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Pfam; PF00083; sugar_tr; 1.
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Ogawa K.-I., Akagawa E., Nakamura K., Yamane K.;
Ogawa K.-I., akagawa E., Nakamura K., Yamane K.;

"Determination of a 21548 bp nucleotide sequence around the degrees region of the Bacillus subtilis chromosome.";
Microbiology 141:269-275(1995).
-i- FUNCTION: UPTAKE OF D-GLUCARATE.
-i- SUBCELLULAR LOCATION: INCEGRAL PERMEASE FAMILY.
-i- SIMILARITY: BELONGS TO THE PHYHALATE PERMEASE FAMILY.
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                                                                 s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EM European Bioinformatics Institute. There are no restriby non-profit institutions as long as its content
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List; BG11160; gudP.
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                                                                                               STANDARD;
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40, Last annotation update)
                                          transporter
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Pred. No. 4.4e-19;
4; Mismatches 197
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          subdivision;
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-!- FUNCTION: UPTAKE OF D-GLUCARATE.
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-98447507; PubMed-9772162;
Hubbard B.K., Koch M., Palmer D.R., Babbitt P.C., Gerlt J.A.;
"Evolution of enzymatic activities in the enolase superfamily:
characterization of the (D)-glucarate/galactarate catabolic pathway
in Escherichia coli.";
in Escheristry 37:14369-14375(1998).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Blattner F.R., Plunkett G. III, Bloch C.A., Riley M., Collado-Vides J., Glasner J.D., R Gregor J., Davis N.W., Kirkpatrick H.A., Go
                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-sorsend an email to license@isb-sib.ch).
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MEDLINE=97426617; PubMed=9278503;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complete genome sequence of Escherichia coli K-12.";
nce 277:1453-1474(1997).
 PIAADLG-VGPLIVLRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVI
                                                                            NARYWIVVMLFIVTSFNYGDRATLSIAGSEM
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                                                 TGKKYQWDAETQGWILGSFFYGYIITQIPGGYVASKIGGKMLLGFGILGTAVLTL---FT
                         -AKDIGLDPVGMGYVFSAFSWAYVIGQIPGGWLLDRFGSKRVYFWSIFIWSMFTLLQGFV
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No. 2.7e-18;
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                                                                                                                                                      Length 450;
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                                  TRANSMEM TRANSMEM
                                                                                                                     Pfam;
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Unpublished observations (OCT-1993).
ין- FUNCTION: INTAKE OF GALACTONATE INTO THE CELL.
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16-OCT-2001 (Rel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN-K12 / MG1655;
MEDLING-93315143; PubMed=7686882;
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                                                                                       DNA
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                                                                                                                                     MEDLINE=96051385; PubMed=7584024;
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NCBI_TaxID=1423;
                                                                                                                                                                                                                 Bacillus subtilis.
Bacteria; Firmicutes;
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Local Similarity
                                                              Res. 1:1-14(1994)
SUBCELLULAR LOCAT
SIMILARITY: BELON
s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
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                                                             Integral membrane protein (Prok
O THE PHTHALATE PERMEASE FAMILY.
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Pred. No. 1.3e
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          Bacillus subtilis
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InterPro; IPR003662; sub_transporter
Pfam; PF00083; sugar_tr; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-98240225; PubMed-9579062;
Rivolta C., Soldo B., Lazarevic V., Joris B., Mauel C., Karamata D.;
"A 35.7 kb DNA fragment from the Bacillus subtilis chromosome containing a putative 12.3 kb operon involved in hexuronate catabolis and a perfectly symmetrical hypothetical catabolite-responsive element.";
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-i- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).
-i- SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Microbiology 144:877-884(1998).
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---LSVFFLYLTGAI-----YWAVIQDVVDQNNVGSVGGFMHFLANTAGIIGPALTGFI 375
                                                                                                    AGGFVSDYVYKKTARKGVLFSRKVVLVTCLFSSAVLIGFAGLVATTAGAVTLVA-----
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""smatches 171;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 422;
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TPDNTVGEWQTVFYIAAAINVFGAIFFTLFAK 520

Db 376 V-DQT-GTFSGAFLLAGGLAVFASLAVIRFVR 405

Search completed: July 15, 2002, 08:25:26 Job time: 191 sec

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Sequence | Store | Escore | Escore | Documentation | Sequence | Stinisi/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50879 + 2836.00 4877.55 2.5e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50879 + 2836.00 4877.55 2.5e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50879 + 2836.00 4877.55 2.5e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50879 + 2874.00 4701.70 1.5e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50879 + 2717.00 4672.77 6.3e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50875 + 2717.00 4672.77 6.3e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50875 + 2717.00 4015.00 2.7e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50881 + 1967.00 3812.87 5.0e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50880 + 2217.00 3812.87 5.0e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50881 + 1967.00 397.59 6.7e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50901 + 1147.00 2473.13 3.5e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA50901 + 1147.00 2473.13 3.5e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA69304 + 1399.50 2299.50 1695.50 0.46e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA69304 + 1399.50 2299.50 1695.50 0.46e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA69303 + 904.50 1653.45 2.6e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA69303 + 904.50 1659.39 1.4e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA69303 + 904.50 1659.50 1.4e-25105i/gegdata/hold-geneseq/geneseq-embl/NR22001A, DAT: AAA69303 + 904.50 1659.50 1.4e-25105i/gegdata/hold-geneseq/geneseq-
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Database sequences: 1736436
Database length: 858457221
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-Q=/cgn2_1/USPTO_spoo1/US09776865/runat_15072002_082208_27459/app_query.fasta_1.1159
-DB=N_Geneseq_03280 -QFMT=fastap -SUFFIX=p2n.rng -GAPOP=12.000
-GAPEXT=4.000 -MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000
-QGAPEXT=4.000 -QGAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-FGAPOP=4.500 -QGAPEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELDOP=6.000 -DELEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELDOP=6.000 -DELEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE=pct
-THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE-LOCAL -OUTFMT=pfs
-NORM-ext -HEAPSIZE=500 -NINLEN-0 -MAXLEN=200000000
-USER-US09776865_@CGN1_1_220 -NCPU=6 -ICPU=3 -LONGLOG
-USER-US09776865_@CGN1_1_220 -NCPU=6 -ICPU=3 -LONGLOG
-THR_DENGAL - UST - THREADS=1
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Percent

Similarity: Quality:

Ratio:

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Percent Identity:

Length:

Gaps:

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seq_documentation_block:
ID AAZ50879 standard; ccl
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AAZ50879;
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AAZ50879;
XX
DT 31-MAY-2000 (first e
XX
Pull length human GBS
XX
Human GBS toxin recep
KW Human GBS toxin recep
KW pathological vascular
KW chronic inflammation;
KW endothelial cell prol
KW enti-angiogenic; anti
XX
Homo sapiens.
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XX

W0200005375-Al.
XX

03-FEB-2000.
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PP R 22-JUL-1998; 98US-0
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C4-JUL-1998; 98US-0
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C5-JUL-1998; 98US-0
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C6-JUL-1998; 98US-0
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C7-JUL-1998; 98US-0
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C8-JUL-1998; 98US-0
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C9-JUL-1998; 98US-0
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C9-JUL-1998; 98US-0
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C9-JUL-1998; 98US-0
XX

C1-IN-1998; 98US-0
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C1-IN-1998; 98US-0
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C2-JUL-1998; 98US-0
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/SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA1998.DAT:AAV57909 + 
/SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001B.DAT:ABL26653 + 
/SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001B.DAT:ABL05169 + 
/SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001B.DAT:ABL051677 +
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                                                                                                                                                                                                                                                                      The present cDNA sequence encodes full length human GBS (group B beta haemolytic streptococci) toxin receptor (HP59). This sequence was cloned by using human embryo lung cDNA library as template. Expression vectors comprising this cDNA can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating conditions associated with pathological angiogenesis or neovascularisation.
                                                                                               (specifically cancer, reperfusion injury, scarring during wound healing, keloids, chronic inflammation (rheumatoid arthritis or psoriasis) or neural injury), and to raise specific antibodies used for treating early onset disease. Inhibitors of this receptor are useful for treating pathological or hypoxia-induced endothelial cell proliferation and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New polynucleotide encoding mammalian receptor for streptococcus toxin, useful for diagnosis and treatment of, e.g. pneumonia in neonates -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chronic inflammation; endothelial cell prol
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 89-93; 109pp; English.
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anti-inflammatory; anti-arthritic; anti-p
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alignment_block:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, by calministering group B beta-hemolytic Streptococci toxin receptor or its
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                                                        The invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is a full length human cDNA of the invention.
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a T, Nagai K, Kojima
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Quality: 2734.00
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                                                                                                                                                                  AlaArgProGlyGlyPheGlyLeuSerGlyArgArgSerLeuLeuCysGl
                       LeuGluAspAsnArgThrSerLysAlaCysProGluHisSerAlaProIl 131
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                                                                                                                                                                                          TTAGAAGATAATAGAACTTCCAAGGCGTGTCCAGAGCATTCTGCTCCCAT
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530	hePheThrLeuPheAlaLysGlyGluValGlnAsnTrpAlaLeuAsnAsp	514
1651		1602
514	pGlnThrValPheTyrIleAlaAlaAlaIleAsnValPheGlyAlaIleP	497
1601		1552
497	GlyProValIleAlaLysSerLeuThrProAspAsnThrValGlyGluTr	481
1551		1502
480	lyIleLeuLeuGlyIleThrAsnThrPheAlaThrIleProGlyMetVal	464
1501		1452
464	SSerSerGlyPheSerIleAsnHisLeuAspIleAlaProSerTyrAlaG	447
1451		1402
447 1401	SerLeualaValalaPheLeuThrIleSerThrThrLeuGlyGlyPheCy	431 1352
430	leGlyProAlaValPheLeuValAlaAlaGlyPheIleGlyCysAspTyr	414
1351		1302
414	pasnPheSerThrLeuCysValArgArgIlePheSerLeuIleGlyMetI	397
1301		1252
397	LeuCysMetIleLeuSerGlyGlnAlaAlaAspAsnLeuArgAlaLysTr	381
1251		1202
380	snValGlnGluAsnGlyPheLeuSerSerLeuProTyrLeuGlySerTrp	364
1201		1152
364 1151	ThrLeuLeuThrLeuLeuProThrTyrMetLysGluIleLeuArgPheA	. 347 1102
347 1101	ProLeuTrpAlaIleValValAlaHisPheSerTyrAsnTrpThrPheTy	331 1052
330	InLeuSerSerGlnLysSerValProTrpValProIleLeuLysSerLeu	314
1051		1002
1001	CCGGGTTCAAGCCATCCTCCCACCTCAGCCTACCAAGTAGTTGGGACGAC	314 952
تن د	GCTGGAGTGCAGTAGCATGATCTTGGCTCACTGCAGCCTCCCCTCTGCC1	ه د
313		313
313	rglleSerHisTyrGluLysGluTyrIleLeuSerSerLeuArgAsn	298
901		852
298	. pPhoLeuLeuTrpIleTrpLeuValSerAspThrProGlnLysHisLysA	281
851		802
281	MetAsnTrpThrTyrValPheTyrPhePheGlyThrIleGlyIlePheTr	265
801		752

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alignment_scores:
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                                                                                                                                                                                                                                                                                                                                                                                                           The present cDNA sequence encodes partial human GBS (group B beta haemolytic streptococci) toxin receptor (HP55). This sequence was cloned by using human embryo lung cDNA library as template. Expression vectors comprising this cDNA can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating conditions associated with pathological angiogenesis or neovascularisation (specifically cancer, reperfusion injury, scarring during wound healing, keloids, chronic inflammation (rheumatoid arthritis or psoriasis) or neural injury), and to raise specific antibodies used for treating early onset disease. Inhibitors of this receptor are useful for treating pathological or hypoxia-induced endothelial cell proliferation and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human GBS toxin receptor; group B beta-haemolytic streptococci; HP55; pathological vascularisation; cancer metastases; angiogenesis; neovascularisation; reperfusion injury; scarring; keloid; chronic inflammation; rheumatoid arthritis; psoriasis; neural injury; endothelial cell proliferation; antibacterial; anticancer; anti-angiogenic; anti-inflammatory; anti-arthritic; anti-psoriatic; si
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ID AAI58115 standard; cI
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DE Human polynucleotide
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KW Human; nootropic; imm
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25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
14-SEP-2000;
19-OCT-2000;
29-NOV-2000;
                                                                                        in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression,
                                                                                                                                                                                                                                                                                                                   Tang
Wang
Zhao
                                                       Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
                               C.N.S disorders.
Note: The sequence data
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 Sequence
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Zhou P,
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                                                                                                                                                                       on relates to human nucleic acids (AAI57798-AAI61369) and polypeptides (AAM38642-AAM42213) with nootropic, essant and cytostatic activity. The polynucleotides are useful
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| GCTGACAATTTAAGGGCAAGATGGAATTTTTCAACTCTGTGGGTTCGAAG
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ProAspAsnThrValGlyGluTrpGlnThrValPheTyrIleAlaAlaAl
                                           TTGCCACTATTCCTGGAATGATTGGGCCCATCATTGCCAGAAGTCTTACC
                                                        heAlaThrI1eProGlyMetValGlyProValI1eAlaLysSerLeuThr
                                                                                                   GGACATTGCTCCTTCGTATGCTGGTATTCTCCTGGGCATCACAAATACCT
                                                                                                                 uAspIleAlaProSerTyrAlaGlyIleLeuLeuGlyIleThrAsnThrP
                                                                                                                                                           TCAACAACCCTGGGAGGCTTTTGCTCTTCTGGATTTAGCATCAACCATCT
                                                                                                                                                                       SerThrThrLeuGlyGlyPheCysSerSerGlyPheSerIleAsnHisLe
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                                       The present sequence is a DNA encoding sheep group B beta-haemolytic streptococci (GBS) toxin receptor protein, SP55. The present invention relates to a method for preventing or attenuating a patho-angiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sheep; group B beta-haemolytic Streptococci toxin receptor; GBS; SP55; cytostatic; vulnerary; antiatherosclerotic; osteopathic; vasotropic; prevention; attenuation; pathoangiogenic condition; cancer; scar; wound healing; gliosis; nerve injury; chronic wound; reperfusion injury; keloid; rheumatoid arthritis; atherosclerosis; osteoarthritis; psoriasis;
                                                                                                                                                                                                                           Disclosure; Page 47-50; 52pp; English.
                                                                                                                                                                                                                                                                        Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, t administering group B beta-hemolytic Streptococci toxin receptor or
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AGTGATACACCAGAAACTCACAAGACAATCACTCCCTATGAAAAGGAGTA
                        SerAspThrProGlnLysHisLysArgIleSerHisTyrGluLysGluTy
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                           neovascularisation; reperfusion injury; scarring; keloid; chronic inflammation; rheumatoid arthritis; psoriasis; ne
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      anti-angiogenic;
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                                                           GBS
                                                                                                                                                 standard;
                                                 toxin receptor; group B beta-haemolytic streptococci;
cal vascularisation; cancer metastases; angiogenesis;
                                                                                 consensus GBS
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proliferation; antibacterial; anticancanti-inflammatory; anti-arthritic: anti-
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                                                                                toxin receptor
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      ibacterial; anticancer;
anti-arthritic; anti-p
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      anti-psoriatic;
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(pos:28.30; aa:Xaa)
(pos:31.33; aa:Xaa)
(pos:34.6.48; aa:Xaa)
(pos:49.51; aa:Xaa)
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                                         IleSerTyrAlaGlyAlaGlnLeuGlyThrVallleSerLeuProLeuSe 258
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|CTTATTTAGGNINTTGGTTATGTATGATCCTGTCNGGTCAAGCTGCTGAC
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                                                                    nValPheGlyAlaIlePhePheThrLeuPheAlaLySGlyGluValGlnA 525
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seq\_documentation\_block:
ID AAH79234 standard;

cDNA;

2670

/SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2001A.DAT:AAH79234

AC X I

(first entry)

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alignment_block:
US-09-776-865-2 x AAH79234
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention provides the protein and coding sequences of hu sodium dependent phosphate co-transfer protein 35. The sequences can used in the treatment of hypophosphaturia, hypercalcaemia, hypophosphataemic rickets and nephritis. The present sequence is the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim
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eLeuLeuTrpIleTrpLeuValSerAspThrProGlnLysHisLysArgI
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osphaturia; hypercalcaemia;
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nilarity: 100.000
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seq\_documentation\_block:
ID AAI59901 standard; cD
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AC AAI59901;
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C 22-OCT-2001 (first e
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DT 22-OCT-2001 (first e
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W Human polynucleotide
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KW Human; nootropic; imm
KW peripheral nervous sy
KW Alzheimer's; Parkinso
KW Alzheimer's; Parkinso
KW amyotrophic lateral s
KW chemokinetic; thrombo
KW leukaemia; ss.

Human polynucleotide SEQ ID

NO 3890

(first entry)

cDNA;

929

ВP

peripheral nervous system; cNS; Alzheimer's; Parkinson's disease; Huntington's disease; Haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemostatic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;

immunosuppressant;

cytostatic; gene therapy;

seq\_name:

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alignment_block:
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                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, ampotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activinjoinhibin activity, chemotactic/chemokinetic activity, hemotactic/chemokinetic chemo
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03-AUG-2000;
14-SEP-2000;
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25-APR-2000;
09-JUL-2000;
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Note:
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Wang
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29-NOV-2000;
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Zhou P,
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ID XX AC

06-NOV-2001

(first entry)

\_documentation\_block: AAK93901 standard;

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/SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001A.DAT: AAK93901

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                                                                                                                                                                                         sAlaMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuS
                          erIleSerTyrAlaGlyAlaGlnLeuGlyThrValIleSerLeuProLeu
                                                                                                                                                                                                                             SerGlyIleIleCysTyrTyrMetAsnTrpThrTyrValPheTyrPhePh
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LeuSerSerLeu
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alignment_block:
US-09-776-865-2 x AAK93901
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Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence was used as the representative sequence from a human clone which was used in homology searches to identify the clone.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
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11-JAN-2000; 2000JP-0118774
02-MAY-2000; 2000JP-0183765
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r \texttt{AsnLeuAlaIleLeuAlaPhePheGlyPhePheIleValTyrAlaLeuA}
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Ratio: 5.079
nilarity: 98.239
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Percent Identity:
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Nagai K, Kojima
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Otsuki T, Koga
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                            298 rg
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                                                                                                                                                                                                                                                                                                      602 GGAGAGGGTGTTACATTTCCAGCCATGCCATGCCATGTGGTCTTCTTGGGC
                                                                                                                                                                                                                                                                                                                                                                 552. CAGATTTAGGAGTTGGACCACTCATTGTACTCAGAGCACTAGAAGGACTA
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GA
                                                           GGTTCTTTGNGGATCTNGGTAGT.AGTGACACACACAAAAACCCCCAGA
                                                                           MetAsnTrpThrTyrValPheTyrPhePheGlyThrIleGlyIlePheTr
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ATGAATTGGACTTATGTCTTCTACTTTTTTGGNACTATTGGAAAAATTTG
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                                                                                                                                                                                                                                                                                                                                                                                                                           ATTTGGGATCCTTGGCACTGTTCCTCACCCTGTTCACTCCCATTGCTG
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seq\_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001A.DAT:AAK92364

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seq_documentation_block:
ID AAK92364 standard; cC
XX
AC AAK92364;
XX
DT 06-NOV-2001 (first e
XX
DE Human cDNA 5'-end seq
XX
KW Human; full length cD
XX
PN EP1130094-A2.
XX
PD 05-SEP-2001.
                                                                                                                                                         cDNA;
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CDNA; CDNA synthesis; oligo-capping; Human cDNA 5'-end sequence,

SEQ

ID NO: 824

(first entry)

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alignment_scores:
Quality:
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US-09-776-865-2 x AAK92364
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11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 isolated and nucleotide sequences of 5'- and 3'-ends of the CDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is the nucleotide sequence of the 5'-end of a cDNA provided in the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
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            LeuGluAspAsnArgThrSerLysAlaCysProGluHisSerAlaProIl
                                                 spLeuAlaArgAsnAspGlyGluGluSerThrAspArgThrProLeuLeu 64
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TTAGAAGATAATAGAACTTCCAAGGCGTGTCCAGAGCATTCTGCTCCCAT
                                                                                                                                                                                                                      ACCTGGCCCGGAACGATGGCGAGGAGGAGCACGGACCGCCACGCCTCTTCTA
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su A, Sugiyama
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2000JP-0118774.
2000JP-0183765.
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: 4.998
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a T, Nagai K, Kojima
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Gaps: 2
Identity: 94.306
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Otsuki
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ID ABL03769 standard;
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488 1778	rPheAlaThrileProGlyMetValGlyProValIleAlaLysSerL:    :::        ::::::::           ::: : : :	472 1729
472 1728	LeuAspIleAlaProSerTyrAlaGlyIleLeuLeuGlyIleThrAsnTh::: :::::            ::           ::	456 1679
455 1678	leSerThrThrLeuGlyGlyPheCysSerSerGlyPheSerIleAsnHis :::::       :::::	439 1629
439 1628	aAlaGlyPheIleGlyCysAspTyrSerLeuAlaValalaPheLeuThrI::::::::::::::::::::::::::::::::::::	422 1579
422 1578	ArgIlePheSerLeuIleGlyMetIleGlyProAlaValPheLeuValAl:::::::::::::::::::::::::::::::::::	406 1529
405 1528	laAlaAspAsnLeuArgAlaLysTrpAsnPheSerThrLeuCysValArg        ::    :: ::       TGGCGGATTGGATGCTAGCCAGACGCTACATATCGCTGCTGAACTCGTAT	389 1479
389 1478	rSerLeuProTyrLeuGlySerTrpLeuCysMetIleLeuSerGlyGlnA::::::	372 1429
372 1428	TyrMetLysGluIleLeuArgPheAsnValGlnGluAsnGlyPheLeuSe               :::::       ::::     ::::     ::::	356 1379
355 1378	isPheSerTyrAsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThr:::::::::::::::::::::::::::::::::::	339 1329
339 1328	OTTPValProIleLeuLysSerLeuProLeuTrpAlaIleValValAlaH      :::         ::                	322 1279
322 1278	LeuSerSerGlnLysSerValPr ::::: GAGGGACAGGATGAAGTGAGTCTGCGGGGCGCCGGAGGAACCGATACC	315 1229
314 1228	euArgAsnGln	311 1179
311 1178	nLysHisLysArgIleSerHisTyrGluLysGluTyrIleLeuSerSerL:	294 1129
294 1128	GlyIlePheTrpPheLeuLeuTrpIleTrpLeuValSerAspThrProGl	278 1079
277 1078	TyrTyrMetAsnTrpThrTyrValPheTyrPhePheGlyThrIle ::: TGGACTTCCTGGGTGGCCGGCCGTCGGCTTTCTACATCTTCGGACTGTTG	263 1029
262 1028	aGlnLeuGlyThrVallleSerLeuProLeuSerGlyIleIleCys ::::::	247 979
247 978	AlaProProLeuGluArgSerLysLeuLeuSerIleSerTyrAlaGlyAl	231 929
230 928	euGlyGluGlyValThrPheProAlaMetHisAlaMetTrpSerSerTrp ::           :::	214 879

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gb_est2:BE661062
gb_est2:BE667611
gb_est2:BF676817
gb_est2:BF578160521
gb_est2:BF53914637
gb_est2:BF124137
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gb_est1:BB613552
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       9b_est2:B1734022

9b_gss:CNS0069V

9b_est2:B1753164

9b_gss:CNS0352N

9b_est2:BF495471

9b_est2:BJ106525
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gb_est2:BI873013
gb_est2:BF123545
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Query length: 536
Dataharr
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Database length: -1841457050
Search time (sec): 2434.030000
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gb_est2:BI907284
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-Q=/Gn2_1/USPTO_spool/US09776865/runat_15072002_082207_27382/app_query.fasta_1.1159
-Q=/Ggn2_1/USPTO_spool/US09776865/runat_15072002_082207_27382/app_query.fasta_1.1159
-DB=EST -QFWT=fastap -SUFFIX=p2n.rst -GAPOP=12.000 -GAPEXT=4.000
-MINMATCH=0.100 -LOOPEL=0.000 -LOOPEXT=0.000 -GAPOP=6.000
-GGAPEXT=0.050 -XGAPOP=10.000 -YGAPOXT=0.500 -BELOP=6.000
-FGAPEXT=7.000 -YGAPOP=10.000 -YGAPOXT=0.500 -DELOP=6.000
-DELEXT=7.000 -YGAPOP=10.000 -YGAPOXT=0.500 -THANS=human40.cdi
-LIST=45 -DOCALIGN=200 -THR_SCORD=pct -THR_MAX=100 -THR_MIN=0
-ALIGN=15 -MODE=LOCAL -OUTFMT=pfs -NORM=ext -HEAPSIZE=500
-MINLEN=0 -MAXLEN=2000000000 -USER=US09776865_@CGN1_1.3468
-NCPU=6 -ICPU=3 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30
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8.8e-72
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7.1e-68
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1.3e-47
1.4e-38
7.3e-38
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gb_est2:BG123873
gb_est2:BJ032567
gb_est2:BG296175
gb_est2:BJ148966
gb_est1:AW531337
                                                                                                                                                                                                                                                                                                           Align seg 1/1 to: AL550137 from:
                                                                                                                                                                                                                                                                                                                                                   US-09-776-865-2 x AL550137
AlaProValCysCysSerAlaArgTyrAsnLeuAlaIleLeuAlaPhePh
                                                         SerGlyArgArgSerLeuLeuCysGlnValAlaSerThrProAlaHisVa
                                                                                                                                                                                                                            TCGGGCCGCGCTCCCTTCTCTGCCAGGTGGCGAGTACACCTGCTCACGT
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Ratio: 5.220
nilarity: 99.695
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BP 191 91006 EVRY cedex - France
Email: segref@genoscope.cns.fr, Web : www
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Li,W.B., Gruber,C., Jessee,J. and Polayes, Full-length cDNA libraries and normalizati Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       prime, mRNA sequence.
AL550137
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1. (bases 1 to 985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL550137.1 GI:12886813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
//db_xref="taxon:9606"
//clone="CS0D1040YK17"
//clone="CS0D1040YK17"
//clone="CS0D1040YK17"
//clone=lib="tITI_NFL006_PL2"
//tissue_type="placenta"
//note="Yector: pCMVSPORT 6; Site_1: NotI; 1st strand cDNA
//note="Yector: pCMVSPORT 6; Site_1 in NotI; 1st strand cDNA
//note="Yector: pCMVSPORT 6; Site_1: NotI; 1st strand cDNA
was primed with a NotI-oligo(dT) primer. Five prime end
enriched, double-stranded cDNA was digested with Not I and
cloned into the Not I and Eco RV sites of the pCMVSPORT 6
vector. Library was normalized. Library was constructed by
Life Technologies. Contact: Feng Liang Life Technologies,
a division of Invitrogen 9800 Medical Center Drive
Rockville, Maryland 20850, USA Fax: (1) 301 610 8371
Email: filang@lifetech.com URL:
http://fulllength.invitrogen.com"
36 a 224 c 224 g 300 t 1 others
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Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Life Technologies,
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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/db_xref="taxon:9606"
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Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae;
1 (bases 1 to 801)
1 HH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collec
                                      CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLAMI1889 row: 1 column: 15
                                                                                                                                                                Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D.,
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etHisAlaMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeu
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92.218
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/lab_host="DH10B"
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/clone_lib="NIH_CGAP_Mam4"
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/db_xref="taxon:10090"
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                                                                                                                               Quality:
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EST.
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BE867611
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
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/clone=lib="NIH_MCC_65"
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/lab host="0H10B (phage-resistant)"
/note="Organ: colon; Vector: pCMV-SPORT6; Site_1: Not1;
/site_2: Sall; Cloned unidirectionally. Primer: Oligo dT.
Sverage insert size 1.8 kb. Library constructed by Life
Technologies. "
171 c 184 g 176 t
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 736) NIH-MCC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
                                                                           Homo sapiens
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                                                                                                                                        mRNA sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            170 ValAlaSerLysIleGlyGlyLysMetLeuLeuGlyPheGlyIleLeuGl 186
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                                                                                                                                                                                                                                                                 251 GACCACTCATTGTACTCAGAGCACTAGAAGGACTAGGAGAGGGTGTTACA 300
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gSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGlyThrValI 253
                                                                                                                                                                           TTTCCAGCCATGCATGTGGTCTTCTTGGGCTCCCCCTCTTGAAAG 350
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Ratio: 5.022
milarity: 91.071
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Email: cgapbs-r@mail.nih.gov
Tissue Procurement: DCTD/DTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        http://image.llnl.gov
Plate: LLAM12008 row: m column:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Consortium (CLNL) Clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   216
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Average insert size 1.883 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
16 a 142 c 147 g 231 t
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REFERENCE
AUTHORS
TITLE
BASE COUNT
ORIGIN
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SOURCE
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LOCUS BF676817
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                                                                                                                                                                                                                                                                                                                                                                                           Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.Onlin.gov

Tissue Procurement: CLONETECH Laboratories, Inc.

CDNA Library Preparation: CLONETECH Laboratories, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov

plate: LLCM1067 row: o column: 20

High quality sequence stop: 598.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleosto Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 626)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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BF676817
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                       157
             /note="organ: prostate; Vector: pDNR-LIB (Clontech);
Site_1: Sfil (ggccgtctggcc); Site_2: Sfil (ggccattatggcc);
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adaptor sequence: 5'-CACGGCCATTATGGCC-3' and 3' adaptor
sequence: 5'-ATTCTAGAGGCCGAGGCGGCCATG-dT[30)BN-3'
(Where B = A, C, Or G and N = A, C, G, or T). Average
insert size 1.4 kb (range 0.5-4.0 kb). 14/15 colontes
contained inserts by PCR. This library was enriched for
full-length clones and was constructed by Clontech
Laboratories (Palo Alto, CA)."
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IMAGE:4248811 5',
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alignment\_scores:

Quality:

Ratio:

991.00 5.243

Length: Gaps:

Percent Similarity: 100.000

Percent Identity: 100.000

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VERSION
KEYWORDS
SOURCE
 JOURNAL COMMENT
                                                                                                                                                                                                                          seq_documentation_block: LOCUS BI697765
                                                               REFERENCE
                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                      seq_name:
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US-09-776-865-2 x BF676817
                                AUTHORS
TITLE
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                                                                                                              ORGANISM
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                          4 Mus musculus
Eukaryota, Metazoa, Chordata, Crar
Mammalia; Eutheria, Rodentia; Sciu
1 (bases 1 to 711)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mar
                                                                                                                                                                                                                                                                     gb_est2:BI697765
                                                                                                                                                                           в1697765
                                                                                                                                                                                        mRNA sequence.
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                        603346858F1 NCI_CGAP_Mam2
                 Unpublished (1999)
                                                                                                                                                            BI697765.1 GI:15660394
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                                                                                                                                                                                                          musculus
                                Mammalian
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                                Gene
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A clone IMAGE:5374407 5',
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BASE COUNT
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US-09-776-865-2
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|AAACTCAAGGGTGGATTCTCGGCTC.TTTTTTACGGCTACATCGTCACC
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|CATAAAAGTTCACCACAATCACACAGGTAAAAAGTACAAGTGGGATGCAG
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GlnIleProGlyGlyTyrValAlaSerLysIleGlyGlyLysMetLeuLe
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Tissue Procurement: Gilbert Smith, Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
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Primer: Oligo dT.
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LOCUS BF539146
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                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Jeffrey E. Green, M.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
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NIH-MCC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect Unpublished (1999)
                                Quality:
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Location/Qualifiers
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Plate: LLAM9522 row:
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                                                          /Strain
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 930.50
4.249
89.388
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Gaps: 3
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seq_documentation_block:
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mRNA sequence.
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ACCESSION

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AUTHORS
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                laCysProGluHisSerAlaProIleLysValHisHisAsnGlnThrGly 139
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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Plate: LLAM9283 row: k column: 09
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4.170
93.562
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:10090"
/clone="IMAGE:4024064"
/clone_lib="NCI_CGAP_Mam5"
/close_type="tumor, gross tissue"
/dev_stage="7 months"
/lab_host="DH10B"
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/strain="C57/B6"
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SOURCE
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LOCUS BC023331
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1531 bp
Mus musculus, clone IMAGE:4500938,
BC023331
                                                                                                                                Contact: amg@bcm.tmc.edu
Gunaratne, P.H., Garcia, A.M., Lu, X.,
Yoon, V.S., Kowis, C.R., Lawrence, S.,
                                                                                                                                                                                                                         cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortiu
DNA Sequencing by: Baylor College of Medicine Hum
Sequencing Center
                                                                                                                                                                                                                                                                                               NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: The Cepko Laboratory
                                                                                                                Richards, S.,
                                                                                                                                                                                        Web site: http://www.hgsc.bcm.tmc.edu/cdna/
                                                                                                                                                                                                              Center code: BCM-HGSC
                                                                                                                                                                                                                                                                                                                                                                                             Submitted (05-FEB-2002) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
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Mammalia; Eutheria; Rodentia;
1 (bases 1 to 1531)
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                                                                                                                Gibbs, R.A.
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mRNA
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                                                                                                                                                                                                                                                                  Consortium
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http://image.llnl.gov

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US-09-776-865-2 x BC023331/rev
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246 GlyAlaGlnLeuGlyThrValIleSerLeuProLeuSerGlyIleIleCy 262
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                                    AATGGGCCCCTCCCTTAGAACGGAGTCGGCTGGCAACGACAGCCTTTTGC
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                                                                                                                                                                                                                                                        TCTTTGGCTTTGCCATTGTGGCTACCTCCACCCTAAACATGTTGATCCCT
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Location/Qualifiers
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2.650
71.608
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/note="Vector: pCMV-SPORT6"
458 c 434 g 268 t
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/clone="IMAGE:4500938"
/tissue_type="Bye, retina, mouse strain C57Bl\6"
/clone_lib="NIH_MGC_94"
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TGAAGAAGTGTTCGGCTTTGAGATCAGCAAGGTGGGGGCTGGTGTCGGCGC 436
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seq\_documentation\_block: LOCUS BG541099 seq\_name: gb\_est2:BG541099

DEFINITION

602570265F1 NIH\_MGC\_77 mRNA sequence.

893 bp n Homo sapiens

mRNA

cDNA clone IMAGE: 4694680 linear

EST 03-APR-2001 2:4694680 5',

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KEYWORDS
SOURCE
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TITLE
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                   rValPheTyrPhePheGlyThrIleGlyIlePheTrpPhe.LeuLeuTrp
                                                                                                      IleSerLeuProLeuSerGlyIleIleCysTyrTyrMetAsnTrpThrTy
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TGTCTTCTACTT.TTTGGTACTATTGGAATATTTGGTTTCTTTG...
                                                                              ATTTCTCTTCCTCTTCTGGAATAATTTGCTACTATATGAATTGGACTTA
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Tissue Procurement: CLONTECH Laboratories, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLCM1519 row: a column: 17
High quality sequence stop: 549.
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National Institutes of Health, Mammalian
Unpublished (1999)
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Sfil (ggccgcctcggcc); Site_2: Sfil (ggccattatggcc); 5' and
3' adaptors were used in cloning as follows: 5' adaptor sequence:
5'-CACGGCCATTATGGCC-3' and 3' adaptor sequence:
5'-ATTCTAGAGGCCGAGCATG-dT(30)BN-3' (where B = A, C, G, or T). Average insert size 1.9
kb (range 0.5-4.0 kb). 12/15 colonies contained inserts by PCR. This library was enriched for full-length clones and was constructed by Clontech Laboratories (Palo Alto, Note: this is a NIH_MGC Library."

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68.000
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/clone_lib="NIH_MGC_77"
/lab_host="DH10B (T1 phage-resistant)"
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SOURCE
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LOCUS BB613552
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                                 Mus musculus
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 Eukaryota; Metazoa;
Mammalia; Eutheria;
                Eukaryota;
                                              house mouse.
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Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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URL:http://genome.gsc.riken.go.jp,
Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh
,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1617-1630 (2000)
wagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,
wagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Tanaka,T., Matsuura
,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and
Hayashizaki,Y.
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Hiramoto,K., Hori,F., Ishii,Y., Ito,M., Kawai,J., Konno,H., Kouda
,M., Koya,S., Matsuyama,T., Miyazaki,A., Nomura,K., Ohno,M.,
Okazaki,Y., Okido,T., Saito,R., Sakai,C., Sakai,K., Sano,H., Sasaki
,D., Shibata,K., Shinagawa,A., Shiraki,T., Sogabe,Y., Suzuki,H.,
Tagami,M., Tagawa,A., Takahashi,F., Takeda,Y., Tanaka,T., Toya,T.,
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The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-9222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000)
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Unpublished (2001)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               e mouse tissues.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Please visit our web site (http://genome.gsc.riken.go.jp) for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Computational Analysis of Full-Length Mouse cDNAs Compared with luman Genome Sequences. Mamm. Genome. 12, 673-677 (2001)
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                                                                                           /note="Site_1: SalI; Site_2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="skin"
/dev_stage="10 days neonate"
/lab_host="DH10B"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:10090"
/clone="4732491M05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
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cDNA was cloned into the xhoI and BamHI sites or: a modified pBluescript KS(+) after bulk excLambda FLC I"
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                                                                              230 pAla.ProProLeuGluArg.SerLysLeuLeuSerIleSerTyrAlaGl
                                                                                                                              578
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                                                                                                                                                                                                                                                                                                                                       164 GlnIleProGlyGlyTyrValAlaSerLysIleGlyGlyLysMetLeuLe
                                                                                                                                                                                                                                                                                                                                                                                                      147 luThrGlnGlyTrpIleLeuGlySerPhePheTyrGlyTyrIleIleThr
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678 GAGC
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                              yAla 247
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REFERENCE
AUTHORS
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URL:http://genome.gsc.riken.go.jp/
Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh
,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1617-1630 (2000)
wagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,
Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura
,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and
Hayashizaki,Y.
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Arakawa,T., Carninci,P., Fukuda,S., Furuno,M., Hanagaki,T., Hara,A., Hiramoto,K., Hori,F., Ishii,Y., Ito,M., Kawai,J., Konno,H., Kouda,M., Koya,S., Matsuyama,T., Miyazaki,A., Nomura,K., Ohno,M., Okazaki,Y., Okido,T., Saito,R., Sakai,C., Sakai,K., Sano,H., Sasaki,D., Shinagawa,A., Shiraki,T., Sogabe,Y., Suzuki,H., Tagawa,A., Takahashi,F., Takeda,Y., Tanaka,T., Toya,T., Muramatsu,M., and Hayashizaki,Y.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Computer-based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of a nonredundant cDNA library. Genome Res. 11 (2), 2812-289 (2001) KONDO, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan Kondo, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, I., Aizan K., Yamanaka, I., Yamanaka, Yamanaka, I., Yamanaka, Y
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Unpublished (2001)
On Jul 31, 2000 this sequence version replaced gi:9593025.
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Genomic Sciences Center and Genome Science
Division of Experimental Animal Research in
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Laboratory for Genome Exploration Research Group, RIKEN Genomic
Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Division of Experimental Animal
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Tel: 81-45-503-9222
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Computational Analysis of Full-Length Mouse cDNAs Compared with tuman Genome Sequences Mamm. Genome. 12, 673-677 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Y. and Hayashizaki, Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Konno, H., Fukunishi, Y., Shibata, K., Itoh, M., Carninci, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RIKEN integrated sequence analysis (RISA) system -- 384 - format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81-45-503-9216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mouse tissues.
    /note="Site_1: SalI; Site_2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Rike
                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
/db_xref="taxon:10090"
                                                                                                                           /dev_stage="0 day neonate"
/lab_host="DH10B"
                                                                                                                                                                   /tissue_type="eyeball"
/dev_stage="0 day neona
                                                                                                                                                                                                                                                                                                   /clone_lib="RIKEN full-length
                                                                                                                                                                                                                                                                                                                                                    /clone="E130006F23"
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Exploration
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       loration Research Group in Riken Science Laboratory in RIKEN. search in Riken contributed to
Research Group
                                                                                                                                                                                                                                                                                                       enriched,
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alignment_block:
US-09-776-865-2 x BB537525
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123 laCysProGluHisSerAlaProIleLysValHisHisAsnGlnThrGly 139
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                                                                                                                                                                    ValThrPheProAlaMetHisAlaMetTrpSerSerTrpAlaProProLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTGATCTCACTTCCCTTTCCGGAATAATATGCTACTATATGAACTGG
                                  hrValIleSerLeuProLeuSerGlyIleIleCysTyrTyrMetAsnTrp
                                                                       GGAAAGAAGCAAGCTTCTTACCATTTCCTATGCGGGAGCACAGCTTGGGA
                                                                                           uGLuArgSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGlyT
                                                                                                                                                 GTTACGTTTCCAGCTATGCACGCCATGTGGTCTTCCTGGGCTCCCCCCTCT
                                                                                                                                                                                                                         TGTGCTTAGAGCGCTGGAAGGACTGGGAGAGAATATCCACCCCCAGGGT
                                                                                                                                                                                                                                            TTCACCCTGTTCACACCGCTGGCCGCAGACTTAGGCGTGGTGACTCTCGT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    863.50
4.824
93.717
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken
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REFERENCE
AUTHORS
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US-09-776-865-2 x AL597124
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                                                                                                                                     103 TGAGGTCTCCGGTTCGAGACCTGGCCCGGAACGATGGCGAGGAGGAGCACG
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                                                                                                                                                        42 etArgSerProValArgAspLeuAlaArgAsnAspGlyGluGluSerThr
                                                                                                                                                                                                                53 GCGCTCCCTTCTCTGCCAGGTGGCGAGTACACCTGCTCACGTAGGCGTCA
                                                                                                                                                                                                                                     25 gArgSerLeuLeuCysGlnValAlaSerThrProAlaHisValGlyValM 42
                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                9 ProArgProValGlnProAlaArgProGlyGlyPheGlyLeuSerGlyAr
                                                        AspArgThrProLeuLeuProGlyAlaProArgAlaGluAlaAlaProVa
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Quality:
Ratio:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Research Center (DKFZ); Email s.wiemann@dkfz- heidelberg.de; sequenced by BMFZ (Biomedical Research Center at the Charite, Berlin/German) within the cDNA sequencing consortium of the German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Am Klopferspitz 18a D-82152 Martinsried, Germany
This is the 5' sequence of the clone insert
Clone from S. Wiemann, Molecular Genome Analysis,
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EST (Koehrer,K., Beyer,A., Mewes,H.W., Weil,B. and Wiemann,S.)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de.
    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Please contact the RZPD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome Project
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 499)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Vector: pTriplEx2; Site_1: SfiIA; Site_2:
cDNA-collection"
1 129 c 133 g 126 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="DKFZp313H1911"
/clone_lib="313 (synonym: hlcc2)"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      862.00
5.256
99.394
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/db_xref="taxon:9606"
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cDNA clone
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FEATURES
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LOCUS AA833297
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     203
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    yrGlnTrpAspAlaGluThrGlnGlyTrpIleLeuGlySerPhePheTyr 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         oGluHisSerAlaProIleLysValHisHisAsnGlnThrGlyLysLysT 142
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 518)
Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubu, Marra, M., Kucaba, T., Lacy, M., Le, M., Martin, J., Morris, M., Schellenberg, K., Steptoe, M., Tan, F., Underwood, K., Moore, B., Theising, B., Wylle, T., Lennon, G., Soares, B., Wilson, R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA833297 518 bp mRNA linear EST 23-FEB-1998 ud05d09.rl Soares_NMPu Mus musculus cDNA clone IMAGE:1434257 5' similar to WP:C38C10.2 CE00105 SODIUM/PHOSPHATE TRANSPORTER;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WashIngton University School of MedicineP
WashIngton University School of MedicineP
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence.
AA833297
AA833297.1 GI:2907025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 314 286 1800 Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1996)
Contact: Marra M/Mouse EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGI:918325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The WashU-HHMI Mouse EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              primer: -28m13 rev2 ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                            quality sequence stop:
Location/Qualifiers
/note="Organ: uterus; Vector: pTTT3D-Pac (Pharmacia) with a modified polylinker; 1st strand cDNA was prepared from pregnant mouse uterus, and was then primed with a Not I oligo(dT) primer. Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pTTT3 vector. Library is normalized. Library was constructed by Bento Soares and M. Fatima Bonaldo. "
                                                                                                                                                                                                                                                                                                                     /organism="Mus musculus"
/db_xref="taxon:10090"
/clone="IMAGE:1434257"
                                                                                                                                                                                                               /lab_host="DH10B"
                                                                                                                                                                                                                                                                      /sex="female"
                                                                                                                                                                                                                                                                                            /clone_lib="Soares_NMPu"
                                                                                                                                                                                                                                           /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        444.
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Ratio: 4.981
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9b_in:AC023711
9b_in:AC023791
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Database length: 1873333701
Search time (sec): 3807.270000
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gb_pr:HSA387747
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gb_pr:AF244577
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-Q=/cgn2_1/USPTO_spool/US09776865/runat_15072002_082208_27415/app_query.fasta_1.1159
-Q=/cgn2_1/USPTO_spool/US09776865/runat_15072002_082208_27415/app_query.fasta_1.1159
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-GAPEXT=4.000 -MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000
-QGAPOP=4.500 -GGAPEXT=-0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-FGADOP=6.000 -FGAPEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELOP=6.000 -DELEXT=7.000 -START=1 -MATRIX=blosum62
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE=pct
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE=pct
-TRANS=100 -THR_MIN=0 -ALIGN=15 -MODE-LOCAL -OUTFMT=pfs
-NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000
-USER=US09776865_@CGN1_1_5372 -NOPU=6 -ICPU=3 -LONGLOG
-TRANS=10-1508 - MINLEN=0 -NORLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -NO_XLPXY -WAIT -THREADS=1
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                                                                                                                                                                                                                                                                                                                                                Homo sapiens membrane glycoprotein HP59 (HP59) mRNA, AF244577
                                                                                                                                                                                            ru,c., Bardhan,S., Četateanu,N.D., Lloyd,S.R., Carter,C.E., Shi,E., Venkov,C., Yakes,M.F., Pag Hellergvist,C.G.
                                                                                                                 2 (bases 1 to 2930)
Fu,C., Bardhan,S., Cetateanu,N.D.,
Direct Submission
                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; F
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 2930)
Fu,C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R., Yan,H.
                                                                                                  Submitted (13-MAR-2000) Biochemistry,
                                                                                                                                                          Unpublished
                                                                                                                                                                    Identification of a novel membrane protein friction that interacts with the anti-pathoangiogenic
                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                    AF244577.1
                                                                                      Medicine, 23rd@Pierce,
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                                                                                                                                                                                                                                                                                                                                    GI:9719373
                                                                                      Nashville,
                                                                                                                             Lloyd, S.R.
                                                                                      Ï
                                                                                                  Vanderbilt University, Scool
                                                                                      37232-0146,
                                                                                                                                                                       from mammalian c
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Page,D.L. and
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alignment_block:
US-09-776-865-2 x AF244577
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51 ArgAsnAspGlyGluGluSerThrAspArgThrProLeuLeuProGlyAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34 erThrProAlaHisValGlyValMetArgSerProValArgAspLeuAla 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17 oGlyGlyPheGlyLeuSerGlyArgArgSerLeuLeuCysGlnValAlaS 34
                                                                                                                                             MetAlaAlaGlyAlaMetThrProProArgProValGlnProAlaArgPr
TrpIleLeuGlySerPhePheTyrGlyTyrIleIleThrGlnIleProGl 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aProArgAlaGluAlaAlaProValCysCysSerAlaArgTyrAsnLeuA 84
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                                                                                                                                                                                                                                 TAATAGAACTTCCAAGGCGTGTCCAGAGCATTCTGCTCCCATAAAAGTTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCACGGGCCGAAGCCGCTCCAGTGTGCTGCTCTGCTCGTTACAACTTAG
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                                                                 TGGATTCTCGGTTCCTTTTTTTATGGCTACATCATCACACAGATTCCTGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IVAAHESYNMTEYTILTLYPYMKEILRENVQENGFISSLPYLGSWLCMILSGQAADN LRAKWNESTLCVRRIFELIGNIGPAVEIVAAGFIGCDYSLAVAFLTISTTLGGFCSSG FSINHLDIABSYAGILLGITNNFATIPGMVGPVIAKSLTPDNTVGEWQTVFYIAAAIN VFGAIFFTLFAKGEVQNWALNDHHGHRH"
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Gaps: 0
Percent Identity: 100.000
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    1663 GGGCATCACAAATACATTTGCCACTATTCCAGGAATGGTTGGGCCCGTCA 1712
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234 963	euGluargSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGly 2 	50 012
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334 1263	lalleValValAlaHisPheSerTyrAsnTrpThrPheTyrThrLeuLeu 3 	50 312
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467 1663	uGlyIleThrAsnThrPheAlaThrIleProGlyMetValGlyProValI 4 	84 712

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KEYWORDS
SOURCE
ORGANISM
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AUTHORS
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Quality: 2804.00
Ratio: 5.261
Percent Similarity: 99.626
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   351
                                                                                                                      251 CACCTGCTCACGTAGGCGTCATGAGGTCTCCGGTTCGAGACCTGGCCCGG
                                                                                                                                                                                  201 GGGCTTCGGGCTGTCGGGCGCGCGCCTCCCTTCTCTGCCAGGTGGCGAGTA 250
                                                                                                                                                                                                                                              35 hrProAlaHisValGlyValMetArgSerProValArgAspLeuAlaArg 51
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Sequence 2 from Patent EP1069184.
AX138494 GI:14274389
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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500		451
101 450	leLeuAlaPhePheGlyPhePheIleValTyrAlaLeuArgValAsnLeu	85 401

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JOURNAL
MEDLINE
REFERENCE
AUTHORS
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ORGANISM
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VERSION
KEYWORDS
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                                                                                                                                                                                    Nat. Gene
20047778
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                                                                                                      Direct Submission
Submitted (03-JUN-1999) F.W.
Clinical Genetics, P.O. Box J
Location/Qualifiers
                                                                                                                                                           2 (bases 1 to 2512)
Verheijen, F.W.
                                                                                                                                                                                                            acid storage diseases
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                                                                                                                                                                                                                                     Mancini, G.M.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                       gene, encoding an anion transporter,
/product="sialin"
/protein_id="CAB62540
/db_xref="GI:6562533"
                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
                                       /codon_start=1
                                                                                                                  F.W. Verheijen,
Box 1738, 3000
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WDAETQGWILGSFFYCYIITQLPGGYVASKIGGKMLIGFGILIGTAVLTLFTP JAADLG
VGPLIVLRALEGLGEGYTFPANHAMWSSWAPPLERSKLLSISYAGAQLGTVISLPLSG
IICYYNNWTYVEYFFCTIGIFWFLLMIWLVSDTPQKHKRISHYEKEYILSSLRNQLSS
OKSVPWVPILKSLPLMAIVVAHFSYNWTFYTLLTLLPTYMKEILRFNVQENGFLSSLP
VLGSWLCMILSGQAAINNLRAKNNESTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYSLA
VAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIGMVGPVIAKSLTPD
NTVGEWQTVFYLAAAINVFGAIFFTLEAKGEYQNWALNDHHGHRH*

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                                                      CTAAAAGTCTGACCCCTGATAACACTGTTGGAGAATGGCAAACCGTGTTC
                                                                        laLysSerLeuThrProAspAsnThrValGlyGluTrpGlnThrValPhe
                                                                                                                            CATCACAAATACATTTGCCACTATTCCAGGAATGGTTGGGCCCGTCATTG
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TITLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAK Plate: 20 Row: i Column: 2 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 6912665.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens, solute carrier family 17 (
member 5, clone MGC:8885 IMAGE:3847279, 1
BC020961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (03-JAN-2002) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 3329)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Web site:
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863
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                       YLGSWLCMILSGQAADNLRAKWNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYSLA
VAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMVGPVIAKSLTPD
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125. .1612
                                                                                                                                                                                                                                                                                                                         /product="solute carrier family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              http://www-shgc.stanford.edu
(Dickson, Mark) mcd@paxil.stanford.edu
M., Schmutz, J., Grimwood, J., Rodrique
                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
o
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, mRNA, complete cds.
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ORIGIN

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alignment_block:
US-09-776-865-2 x BC020961
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
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726
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                                                                                                                                                                                                                                                                                    276
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                                                                                                                                                                                                                                                                                                                                                                                                                                             leSerTyrAlaGlyAlaGlnLeuGlyThrValIleSerLeuProLeuSer 258
                            yGlyLysMetLeuLeuGlyPheGlyIleLeuGlyThrAlaValLeuThrL 192
                                                                                                                                                       YIGInTIPASPAlaGluThIGInGIYTIPIIeLeuGIYSerPhePheTyr 158
                                                                                                                                                                                                                     gArgSerLeuLeuCysGlnValAlaSerThrProAlaHisValGlyValM
                                                                                                                                                                                                                                                     GTAGATTCAAATACAACTTTAGAAGATAATAGAACTTCCAAGGCATGTCC
                                                                                                                                                                                                                                                                                                                                                                                                              GCGCTCCCTTCTCCCAGGTGGCGAGTACACCTGCTCACGTAGGCGTCA
TTTCATATGCAGGAGCACAGCTTGGGACAGTAATTTCTCTTCCTCTTTCT
                                                                                                                         GGGGAAAATGCTGCTAGGATTTGGGATCCTTGGCACTGCTGTCCTCACCC
                                                                                                                                                                                       ACCAATGGGATGCAGAAACTCAAGGATGGATTCTCGGTTCCTTTTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality: 2770.50
Ratio: 5.257
milarity: 99.811
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Gaps: 1
t Identity: 99.432
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6
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525 nTrpAlaLeuAs              1576 CTGGGCTCTCAA	509 ValPheGlyAla             1526 GTTTTTGGTGCC	492 snThrValGlyG               1476 ACACTGTTGGAG	475 rIleProGlyMe             1426 TATTCCAGGAAT	459 AlaProSerTyrA               1376 GCTCCTTCGTATG	442 hrLeuGlyGlyP               1326 CACTGGGAGGCT	425 eIleGlyCysAs              1276 CATTGGCTGTGA	409 SerLeuIleGlyM 	392 snLeuArgAlaL 	375 oTyrLeuGlySe              1126 TTATTTAGGCTC	359 GluIleLeuArg              1076 GAGATCCTAAGG	342 yrAsnTrpThrP              1026 ACAACTGGACTT	325 oIleLeuLysSe             976 CATTTTAAAATC	309 SerSerLeuArg 	292 hrProGlnLysH              876 CACCACAAAAAAC	275 yThrIleGlyIl 	259 GlyIleIleCys             776 GGAATAATTTGC
DASPHISHISGIYHISATGHIS 536	.TlePhePheThrLeuPheAlaLysGlyGl 	luTrpGlnThrValPheTyrIleAlaAla 	tValGlyProValIleAlaLysSerLeu] 	laGlyIleLeuLeuGlyIleThrAsnTh 	PheCysSerSerGlyPheSerIleAsnHis                    TTTTGCTCTTCTGGATTTAGCATCAACCAT	pTyrSerLeuAlaValAlaPheLeuThrI 	MetileGlyProAlaValPheLeuValAl 	LystrpasnPheSerThrLeuCysValarg 	rTrpLeuCysMetIleLeuSerGlyGlnA 	PheasnValGlnGluAsnGlyPheLeuSe 	rPheTyrThrLeuLeuThrLeuLeuProThr 	rLeuProLeuTrpAlaTleValValAlaH 	gAsnGlnLeuSerSerGlnLysSerValPr 	isLysatgIleSerHisTyrGluLysGlu 	.ePheTrpPheLeuLeuTrpIleTrpLeuVal. 	TyrTyrMetasnTrpThrTyrValPheTy                     TACTATATGAATTGGACTTATGTCTCTA
	LuValGlnAs 52            AGTACAAAA 15	AAlaileAsn 50             GCTATTAAT 15	PhrProAspA 49	nrPheAlaTh 47	LeuAspIle 4          CTGGATATT 1	[leSerThrT 44            \TATCAACAA 13	laAlaGlyPh 42            TGCTGGCTT 12	ArgIlePhe 4           AGAATTTTT 1	AlaAlaAspA 39            CTGCTGACA 11	rSerLeuPr 3	TTYTMETLYS 35	isPheSerT 3           ACTTTTCTT 1	oTrpValPr 3           GTGGGTACC 9	luTyrIleLeu 34              AATACATTCTT 9:	SerAspT 2         AGTGACA 8	rPhePheG1 2           CTTTTTTGG 8
	25 575	08 525	92 475	75 425	58 375	42 325	25 275	08 225	92 175	75 125	58 075	42 025	25 75	08 25	92	75 25

MAM 06-AUG-2000 complete cds.

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alignment_block:
US-09-776-865-2 x AF244578
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VERSION
KEYWORDS
SOURCE
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AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
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ORIGIN
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                                                                                                                                                                                                                                                                                                                                                                                                   Quality: 2338.00
Ratio: 4.901
Percent Similarity: 95.976
                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: AF244578
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
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                                                                           178
   228
                                                                                                                                                     128 GGGCTCGGACCGCACACCGCTCCTGCAGCGCGCCCCCGCGGGGGGAACCCG
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                                                                                             73 laProValCysCysSerAlaArgTyrAsnLeuAlaIleLeuAlaPhePhe 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                 90 GlyPhePheIleValTyrAlaLeuArgValAsnLeuSerValAlaLeuVa 106
                                                                                                                                                                         56 uSerThrAspArgThrProLeuLeuProGlyAlaProArgAlaGluAlaA 73
                                                                                                                                                                                                                               78
                                                                                                                                                                                                                                                                   40
                                                                                                                                                                                                                                                   GlyValMetArgSerProValArgAspLeuAlaArgAsnAspGlyGluGl 56
                                                                                                                                                                                                                             GGCATCATGAAGTCCCCGGTTTCGGACTTAGCCCCGAGCGACGGCGAGGA 127
GGTTTCTTCGTTCTCTATTCATTACGGGTGAATCTGAGCGTTGCACTAGT
                                                                           CTCCAGTATGCTCTCTCGTTACAACCTAGCATTTTTGTCCTTTTTT
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Fu,C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R., Yan,H.-P.,
Carter,C.E., Shi,E., Venkov,C., Yakes,M.F., Page,D.L. and H.C.G.
Identification of a novel membrane protein from mammalian cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ovis aries

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;

Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (13-MAR-2000) Biochemistry, Vanderbilt University, Scool of Medicine, 23rd@Pierce, Nashville, TN 37232-0146, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fu,C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R. and Hellerqvist,C.G. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF244578
AF244578.1 GI:9719375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     that interact with the anti-pathoangiogenic compound CM101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sheep.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLA
VAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGPIIARSLTPE
NTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWAISDHQGHRN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to Na+ inorganic phosphate transporter"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="sp55"
84. .1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="lung"
1. .2844
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/db_xref="taxon:9940"
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Percent Identity: 86.117
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277
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CAACTCTGTGG AlaValPheLeu	CIGACAATTTAAGGGCAAGATGGAATTTT IlePheSerLeuIleGlyMetIleGlyPr	406
SerThrLeuCysVa 	AlaAspAsnLeuArgAlaLysTrpAsnPheS	
etIleLeuSerGlyG               GATCCTGTCGGGTC	erLeuProTyrLeuGlySerTrpLeuCysMe :::::            CAGTCCCTTATTTAGGTTGTTGGTTATGTAT	373
nGluAsnGlyPheLe             AGAGAATGGGTTTTT	rMetLysGluIleLeuArgPheAsnValGln          :::         :::     CATGAAGGAAGTCCTAAGGTTCAATATTCAA	356 028
ıLeuThrLeuLeuPro              TTGACCTTATTGCCT	PheSerTyrAsnTrpThrPheTyrThrLeul 	340 978
rpAlaIleValValA              GGGCTATTGTCGTTG	rpValProIleLeuLysSerLeuProLeuT:   :::   :::	323 928
rSerGlnLysSerVa              TTCACAGAAGTCAGT	rIleLeuSerSerLeuArgAsnGlnLeuSer                  TATTCTTTCATCATTAAAAAATCAGCTCTCT	306 878
SerHisTyrGluLysG :::          ACTCCCTATGAAAAGG	SeraspThrProGlnLysHisLysArgIle	290 828
euLeuTrpIleTrpLe :::         !TTTTATGGATCTGCTT	hePheGlyThrIleGlyIlePheTrpPheL	273 778
nTrpThrTyrValPhe            TTGGACTTATGTCTTC	OLeuSerGlyIleIleCysTyrTyrMetAsı           :::               TCTTTCTGGAGTAATTTGCTACTATATGAA	256 728
GlyThrValIleSerL          :::      GGGACAGTAGTTTCTC	LeuSerIleSerTyrAlaGlyAlaGlnLeuchlliiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	240 678
roLeuGluArgSerLy 	etHisalaMetTrpSerSerTrpAlaProp.	223 628
uGlyValThrPhePro             GGGTGTCACATATCCA	eValLeuArgAlaLeuGluGlyLeuGlyGl:::::	206 578
LeuGlyValGlyProL :::         TTCGGAGTCGGAGCCC	LeuThrLeuPheThrProIleAlaAlaAsp: :::               TTCACCCTGTTCACTCCCCTCGCTGCAGAT	190 528
lyIleLeuGlyThrAl      :::::       GGATCTTTGCTACAGC	ysIleGlyGlyLysMetLeuLeuGlyPheG ::           GAAGTGGGGGGAAGCTGTTGCTAGGATTCG	173 478
oGlyGlyTyrValAla                TGGAGGATATGTTGCC	ePheTyrGlyTyrIleIleThrGlnIlePr	156 428
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GluAspAsnArgThrSe :::           hAAGATAATAGAACGTC	laspMetValaspSerasnThrThrLeuGlua:	106 278

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BASE COUNT
ORIGIN
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Sequence 3 from Patent WO0156598
AX207626
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                                                                                                             TCTTTCTGGAGTAATTTGCTACTATATGAATTGGACTTATGTCTTCTATT
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alignment\_scores:

289

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727 256 677 239 627

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REFERENCE
AUTHORS
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                                                                                      Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Eukaryota; Neoptera; Endopterygota; Diptera; Brachycera;
Pterygota; Neoptera; Endopterygota; Drosophila.
                                                                                                                                                                                                                                               ArU60776 1841 bp
Drosophila melanogaster GH23975
Stapleton, M., Brokstein, P., Hong, L., Agbayani, A., Carlson, J., Champe, M., Chavez, C., Dorsett, V., Farfan, D., Frise, E., George, R., Gonzalez, M., Guarin, H., Li, P., Liao, G., Miranda, A., Mungall, C.J.,
                                                           Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 1841)
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                                                                                                                                                                                                           x AY060776
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Align seg 1/1, to: AY060776
                                                                                                                                        244 CGCTACATTGTGGTGCTACTGGCTTTCTTCGGATTCTTCAATGTCTACTC
                                                                96 aLeuArgValAsnLeuSerValAlaLeuValAspMetValAspSerAsnT 113
                                                                                                                                                                           ArgTyrAsnLeuAlaIleLeuAlaPhePheGlyPhePheIleValTyrAl
ACTGCGAGTGAATCTTTCGGTGGCCATTGTGGCCATGACCGAGAATCGCA
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Sequence submitted by:
Berkeley Drosophila Genome Project
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Yu,C., Lewis,S.E., Rubin,G.M. and Celniker,S.
Direct Submission
Submitted (30-cCT-2001) Berkeley Drosophila Genome Project,
Lawrence Berkeley National Laboratory, One Cyclotron Road,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 For further information about this sequence, including its location and relationship to other sequences, please visit our Web site (http://fruitfly.berkeley.edu) or send email to cdna@fruitfly.berkeley.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This clone was sequenced as part of a high-throughput process to
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YILTQPLGGY IGTKIGGNIVFGTGIGSTAILTLLTPMAASHSLEMFLFVRIIEGFEG
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2.892
76.562
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LVGCVIYWFYCSGDLQEWAKTPEQKAQEAEEKAQLQLTQTAGFVNSGAELKD"
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/brotein_id="ABL28324.1"
/translation="MTDLESPKNGKHLEQVHQNNNEITESEPLTWRFWRKQRYIVVLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organisme"Drosophila
/strain="y; cn bw sp"
/db_xref="taxon:7227"
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                       TTGACCTTGGCAAAACAGGCATTCTTTCGGCGGTTCCATACCTGGCCATG
                                                                                                                                                                                                                                                                                         eTyrThrLeuLeuThrLeuLeuProThrTyrMetLysGluIleLeuArgp 363
                                                                                                                                                                                                                                                                                                                                                                                               LeuProLeuTrpAlaIleValValAlaHisPheSerTyrAsnTrpThrPh 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PheTrpPheLeuLeuTrpIleTrpLeuValSerAspThrProGlnLysHi 296
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GGGCATTTGGACGACCACCCAGGTTAGGCGGAACTTCAACTGTGGAGCCT 1198
                                                                                GCATCCTGCTGGCCGTGTCCGGTTATTTGGCTGATTGGCTGCAGGTGAA
                                                                                                                             TrpLeuCysMetIleLeuSerGlyGlnAlaAlaAspAsnLeuArgAlaLy 396
                                                                                                                                                                                                                  heAsnValGlnGluAsnGlyPheLeuSerSerLeuProTyrLeuGlySer 379
                                                                                                                                                                                                                                                               CTACACCCTGCTCACCCAGCTGCCCAGCTTCCTCAGGGACACGCTCAACT 1048
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              snGlnLeuSerSerGlnLysSerValProTrpValProIleLeuLysSer 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGCTTCTGTTCGAAGGAGGAATGCGACTACATCCAGAAGACCATCGGGT 898
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REFERENCE
AUTHORS
TITLE
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VERSION
KEYWORDS
SOURCE
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                                                                                                                                                                    Quality:
                                                                                                                                                                                                                                                                                                                                                                               This sequence was identified as CDM:10212070 by For further information on this sequence e-mail * NOTE: This is a 'working draft' sequence. * This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (16-NOV-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 33444)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster
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/db_xref="taxon:7227"
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PROGRESS ***, in ordered
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0000	CGTCACATTTTCGGATTCATGGGCTTCCTGGGGATTCGCCGTGGTCTACGC 5	666
96	· · ·	L10 5049
11	SerAsnThrThrLeuGluAspAsnArgThrSerLysA	123
6050	TCCGCACAGCAACTCATCGGTGATTGATACGGACACG	090
124 6091	luhisSeralaProIleLysValhishisAsn	136
137 6129	lnThro	L51 5178
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6179	TGCTCGGCAGTTTCTTCTATGGCTATGTGCTAACCCAAGTGCCCGG	5228
168 6229	aSerLysIleGlyGlyLysMetLeuLeuG  :::    caagcTgTaTGGTGGAAGAAGATCTACG	L84 5278
184 6279	rLeuPheThr     :::     GCTTATAACT	201 3328
201 6329	lyValGlyProLeuIleValLeuArgAlaLeuGluGlyLeuGlyGluGly 2 :::	217
218 6379	TrpSerSe ::: CTTGCCCA	134
234 6429	LeuSerIleSerTyrAlaGlyAla :::               GCCGCAATCGTCTATGCGGGCTCC	251 478
251 6479	Ilecys :::    crgrgcrcgcrgg	528
265 6529	<pre>xTyrValPheTyrPhePheGlyThrIleGlyIlePheTr 2 xTy:::      :::  GTCGGCTTTCTACATCTTCGGACTGTTGGGCATTCTGTG 6</pre>	981 5578
281 6579	.euTrpIleTrpLeuValSerAspThrProGlnLysHisLysA 2 	628
298 6629	TyrGluLysGluTyrIleLeuSerSerLeuArgAsnGln 3     :::          TCGGAGCGAGAGTATATCGAAAGGAGTCTACAGGTTCAG 6	114 1678
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6679	GCTAATAAATCAGGATCTAGCGGAGGCCGAGGAAGAGGAGGGACAGGA 6	7
315 5729	erSerGlnLysSerValProTrpValProI 3 :::::: ::::       CGCCGGAGGAACCGATACCCTGGTCATCGC 6	778
326 6779	AlaHisPheSerTyr 3 :::::: ACGCAATGCGGCCAG 6	142
343	AsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetLysGl 3 :::   :::	59

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SOURCE
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Muzny, D., Scherer, S., Adams, M.D., Holt, R.A., Evans, C.A.,
Gocayne, J.D., Tabor, P., Williamson, A., Homsi, F.H.,
Dugan-Rocha, S.D., Sodergren, E.S., Hodgson, A.H., Chen, R.C.,
Ayele, M.A., Scott, G.S., Worley, K.W., Amamatides, P.G., Brandon, R.C.,
Rogers, Y., An, H., Baldwin, D., Beeson, K.Y., Brown, M., Buhay, C.,
Busam, D.A., Center, A., Chen, G., Chen, Z., Clerc-Blankenburg, K.,
Davenport, L.B., Dietz, S.M., Ding, Y., Dodson, K., Doup, L.E.,
Draper, H., Emery-Cohen, A., Ferriera, S., Garg, N.D.S., Houck, J.,
Hostin, D., Howland, T.J., Hume, J., Ibegwam, C., Jalali, M., Kovar, C.,
Liu, W., Mattel, B., McIntosh, T.C., Morgan, M., Moy, M., Murphy, B.,
Nelson, K.A., Ndassa, Y., Ngupen, N., Perez, L., Pittman, G.S., Puri, V.,
Scheeler, F., Shen, H., Strong, R., Tector, C., Wang, Q., Williams, S.M.,
Xiang, J., Zaveri, J.S., Zhou, J., Zorrilla, S., Smith, H.O.,
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Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

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167928 bp DNA linear INV 03-JAN Drosophila melanogaster 3L BAC RP98-20N12 (Roswell Park Cancer Institute Drosophila BAC Library) complete sequence.
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                                                                                                     Noriey, K.C., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buhay, C., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Dapar, H., Davy-Carroll, L., Dederich, D.A., Delaney, K.R., Delgado, O., Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., Earnhart, C., Edgar, D., Edwards, C., Elhaj, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Gabisi, A., Gao, J., Garcia, A., Garner, T., Garza, N., Gill, R., Gorrell, J.H., Guevara, W., Gunaratne, P., Hale, S., Hamilton, K., Harris, C., Harris, K., Hart, M., Havlak, P., Hawes, A., Hernandez, J., Howson, B., Jia, Y., Johnson, R., Joliwet, S., Hume, J., Jackson, L., Jacobson, B., Jia, Y., Johnson, R., Jolivet, S., Hume, J., Jacobson, B., Jia, Y., Johnson, R., Johnson, 
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L., Byrd, N.C., Carron, T.F., Charter, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Chen, R., Ch
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                                                       Submitted (17-FEB-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
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Jackson,L.E., Jacobson,B., Jia,Y., Johnson,R., Jolivet,S.,
Joudah,S., Karlsson,E., Kelly,S., Khan,U., King,L., Korvah,J.,
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REFERENCE

(bases 1 to 167928)

AUTHORS

Worley, K.C., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J. Benton, J., Binage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buhay, C.,

Barbaria,J.,

Submitted (01-JAN-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA

TITLE JOURNAL

Direct Submission

CCE 5 (bases 1 to 167928)
CCE 5 (bases 1 to 167928)
CCE 5 (bases 1 to 167928)
RRS Worley, K.C., Adams, C., Adio, Oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryadt, N.P., Burch, P., Burch Mei,G., Metzker,M., Miner,G., Miner,Z., Mitchell,T., Mohabbat,K., Morgan,M., Morris,S., Moser,M., Neal,D., Newtson,J., Newtson,N., Nguyen,A., Nguyen,N., Nguyen,N., Nickerson,E., Nwokenkwo,S., Oguh,M., Okwuonu,G., Oragunye,N., Oviedo,R., Pace,A., Payton,B., Peery,J., Perez,L., Peters,L., Pickens,R., Primus,E., Pu,L.L., Quiles,M., Ren,Y., Rives,M., Rojubokan,I., Rolfe,M., Ruiz,S., Savery,G., Scherer,S., Scott,G., Shen,H., Shooshtari,N., Sisson,I., Sodergren,E., Sonaike,T., Sparks,A., Stanley,H., Stone,H., Sutton,A., Svatek,A., Tabor,P., Tamerisa,A., Tang,H., Tansey,J., Taylor,C., Taylor,T., Telfrod,B., Thomas,N., Thomas,S., Ward,Moore,S., Warren,R., Washington,C., Walliamson,A., Wallalon,D., Vinson,R., Wall,R., Wang,S., Ward-Moore,S., Warren,R., Washington,C., Weinstock,G., and Gibbs,R. Submitted (29-DEC-2001) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA 5 (bases 1 to 167928) Kovar,C., Kratovic,J., Kureshi,A., Landry,N., Leal,B., Lewis,L.C Lewis,L., Li,J., Li,Z., Lichtarge,O., Lieu,C., Liu,J., Liu,W., Loulseged,H., Lozado,R.J., Lu,X., Lucier,A., Lucier,R., Luna,R., Ma,J., Maheshwari,M., Mapua,P., Martin,R., Martindale,A., Martinez,E., Massey,E., Mawhiney,E., McLeod,M.P., Meador,M., Direct Submission Tamerisa, K. Lewis, L.C.,

REFERENCE AUTHORS

JOURNAL TITLE

alignment\_block: US-09-776-865-2 x AC023685 alignment\_scores:
Quality: Align seg 1/1 to: AC023685 Percent Similarity: 150045 GTTGATCACGGCGTCTTTACGCTTATAACTCCATTGGCTGCCCACTGGG 150094 149995 GGACGGATGGCCGAGCTGTATGGTGGGAAGAAGATCTACGGCTATGGAGT 150044 149816 CAATTCCGCACAGCAACTCATCGGTGATTGATACGGACACG..... 149856 149945 TGGTGCTCGGCAGTTTCTTCTATGGCTATGTGCTAACCCAAGTGCCCGGC 149994 149895 CAATCCGCAGAAGGAGGCGAGTTTGTGTGGGACGAGGCCACGCAGGGAT 149944 149857 TGTCCA...CTACCGGCACCA......CATCACAATGGTAGCGATCC 149894 149766 GATGCGGGTCAATCTGTCGGTGGCCATTGTGGCCATGGTGAACCAAACGG 149815 149716 CGTCACATTTTCGGATTCATGGGCTTCCTGGGATTCGCCGTGGTCTACGC 149765 168 GlyTyrValAlaSerLysIleGlyGlyLysMetLeuLeuGlyPheGlyIl 184 124 CysProGluHisSerAlaProIleLysValHisHisAsn..... 184 eLeuGlyThrAlaValLeuThrLeuPheThrProIleAlaAlaAspLeuG 201 137 ......GlnThrGlyLysLysTyrGlnTrpAspAlaGluThrGlnGlyT 151 111 .....SerAsnThrThrLeuGluAspAsnArgThrSerLysAla 123 201 lyValGlyProLeuIleValLeuArgAlaLeuGluGlyLeuGlyGluGly 217 96 aLeuArgValAsnLeuSerValAlaLeuValAspMetValAsp....... 80 ArgTyrAsnLeuAlaIleLeuAlaPhePheGlyPhePheIleValTyrAl 96 Hollins, B., Homsi, F., Howard, S., Hubber, J., Hulyk, S., Hume, J., Jackson, L. E., Jacobson, B., Jia, Y., Johnson, R., Jolivet, S., Joudah, S., Karlsson, E., Kelly, S., Khan, U., King, L., Korvah, J., Kovar, C., Kratovic, J., Kureshi, A., Landry, N., Leal, B., Lewis, L. Li, J., Li, Z., Lichtarge, O., Lieu, C., Liu, J., Liu, W., Louleseged, H., Lozado, R.J., Lu, X., Lucier, A., Lucier, R., Luna, R., Martinez, E., Massey, E., Mawhiney, E., McLeod, M., P., Meartindale, A., Mei, G., Metzker, M., Miner, G., Miner, Z., Mitchell, T., Mohabbat, K., Morgan, M., Morris, S., Moser, M., Neal, D., Newtson, J., Newtson, N., Nguyen, A., Nguyen, N., Nickerson, E., Nwokenkwo, S., Oguh, M., Okwuonu, G., Oragunye, N., Oviedo, R., Pace, A., Payton, B., Peery, J., Perez, L., Peters, L., Pickens, R., Primus, E., Pu, L. L., Quiles, M., Ren, Y., Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Sisson, I., Sodergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H., Sutton, A., Svatek, A., Tabor, P., Tamerisa, K., Tamerisa, K., Dugan-Rocha, S., Durbin, K.J., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Elhaj, C., Frantz, P., Gabisi, A., Gao, J., Garcia, A., Garner, T., Garza, N., Gill, R., Gorrell, J.H., Guevara, W., Gunaratne, P., Hale, S. Hamilton, K., Harris, C., Harris, K., Hart, M., Havlak, P., Hawes, A., Brandon, T., Horandon, T., Horandon, M., Harris, C., Hart, M., Havlak, P., Hawes, A., Brandon, T., Horandon, M., Harris, C., Hart, M., Havlak, P., Hawes, A., Brandon, M., Harris, C., Hart, M., Havlak, P., Hawes, A., Brandon, M., Harris, C., Hart, M., Havlak, P., Hawes, A., Brandon, M., Harris, C., Hart, M., Havlak, P., Hawes, A., Brandon, M., Hart, M., Havlak, P., Hawes, A., Brandon, M., Harris, C., Hart, M., Havlak, P., Hawes, A., Brandon, M., Hart, M., Havlak, P., Hawes, A., Brandon, M., Hart, M., Havlak, P., Hawes, A., Brandon, M., Brandon Davy-Carroll,L., Dederich,D.A., Delaney,K.R., Delgado,O.,
Denn,A.L., Ding,Y., Dinh,H.H., Douthwaite,K.J., Draper,H.,
Dugan-Rocha,S., Durbin,K.J., Earnhart,C., Edgar,D., Edward Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Hernandez,J., Ratio: 984.50 2.921 69.342 Hernandez, O., Hodgson, A., Hogues, M., Holloway, C., from: 1 to: 167928 Length: 486
Gaps: 8
Percent Identity: 40.947 136 110 Hale, S.,

150095	arcreccectragreereereereereereereereereereereereeree	50144
218 150145	ValThrPheProAlaMetHisAlaMetTrpSerSerTrpAlaProProLe 2	234 L50194
234 150195	uGluArgSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGlyT 2        :::    :::	251 L50244
251 150245	hrVallleSerLeuProLeuSerGlyIleIleCysTyrTyr 2	264 L50294
265 150295	WetAsnTrpThrTyrValPheTyrPhePheGlyThrIleGlyIlePheTr 2 :::    :::    :::        :::	281 L50344
281 150345	pPheLeuLeuTrp1leTrpLeuValSerAspThrProGlnLysHisLysA 2           :::	298 .50394
298 150395	rgIleSerHisTyrGluLysGluTyrIleLeuSerSerLeuArgAsnGln 3	50444
314	30000000000000000000000000000000000000	50/0/
31	erSerGlnLysSerValProTrpValProI 3 :::::: :::	26
326 150545	IleValValAlaHisPheSerTyr 3    ::::::::::::::::::::::::::::::::::	50594
343 150595	AsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetLysGl 3 :::   :::	50644
359 150645	ulleLeuArgPheAsnValGlnGluAsnGlyPheLeuSerSerLeuProT 3:      :::   :::::    ::::::     3:	176 50694
376 150695.	yrLeuGlySerTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAspAsn 3 	.50744
393 150745	LeuArgAlaLysTrpAsnPheSerThrLeuCysValArgArgIlePheSe 4 :::     :::	.50794
409 150795	eLeuValAlaAlaGlyPheI 4    ::::: CCTGATTGGCATCATCTATG 1	.26 50844
426 150845	leGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerThrThr 4 ::        ::: :::::::::::::::::::::::	50894
443 150895	LeuGlyGlyPheCysSerSerGlyPheSerIleAsnHisLeuAspIleAl 4 :::       :::    TTCGGCGGCGCCGTCTATGCTGGCAACCAGATGAATCACATAGCGCTCAG 1	59
459 150945	aProSerTyralaGlyIleLeuLeuGlyIleThrasnThrPhealaThrI 4 :	76 50994
476	leProGlyMetValGlyProValIleAlaLysSerLeuThrProAsp 4	91

150995 TCTGTGGCTTCCTGGCTCCGTATGTCATCGGTCTAATCATCATCATCGC 151044

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REFERENCE . AUTHORS
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VERSION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
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RS Worley, K.C., Adams, C., Adio-oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Blatbooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Benton, J., Blimage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buck, J., Bowie, S., Brown, E., Brown, M., Bryant, N.P., Buhay, C., Burch, P., Burch, P., Chacko, J., Chavez, D., Chen, G., Chen, R., Charter, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Davy-Carroll, L., Dederich, D.A., Delaney, K.R., Delgado, O., Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., Earnhart, C., Edgar, D., Edwards, C., Elhaj, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Gabis, A., Gao, J., Garcia, A., Ganner, T., Garza, N., Gill, R., Gorrell, J.H., Guevara, W., Gunaratne, P., Hale, S., Hamilton, K., Harris, C., Harris, K., Harris, M., Haylak, P., Hawes, A., Hollins, B., Homsi, F., Howard, S., Huber, J., Hulyk, S., Hume, J., Juckson, L.E., Jacobson, B., Jia, Y., Johnson, R., Jolloway, C., Korvah, J., Kovar, C., Kratovic, J., Kureshi, A., Landry, N., Leal, B., Lewis, L.C., Lewis, L.C., Liu, J., Liu, W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Metazoa; Endopteryota; Diptera; Erachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

2E 1 (bases 1 to 174163)

2S Muzny,D., Scherer,S., Adams,M.D., Holt,R.A., Evans,C.A., Gocayne,J.D., Tabor,P., Williamson,A., Homsi;F.H.,
Dugan-Rocha,S.D., Sodergren,E.S., Hodgson,A.H., Chen,R.C.,
Ayele,M.A., Scott,G.S., Worley,K.W., Amamatides,P.G., Brandon,R.C.,
Rogers,Y., An,H., Baldwin,D., Beeson,K.Y., Brown,M., Buhay,C.,
Busam,D.A., Center,A., Chen,G., Chen,Z., Clerc-Blankenburg,K.,
Davenport,L.B., Dietz,S.M., Ding,Y., Dodson,K., Doup,L.E.,
Davenport,L.B., Dietz,S.M., Ding,Y., Dodson,K., Doup,L.E.,
Draper,H., Emery-Cohen,A., Ferriera,S., Garg,N.D.S., Houck,J.,
Hostin,D., Howland,T.J., Hume,J., Ibegwam,C., Jalali,M., Kovar,C.,
Liu,W., Mattei,B., McIntosh,T.C., Morgan,M., Moy,M., Murphy,B.,
Nelson,K.A., Ndassa,Y., Nguyen,N., Perez,L., Pittman,G.S., Puri,V.,
Scheeler,F., Shen,H., Strong,R., Tector,C., Wang,Q., Williams,S.M.,
Wilseler,D., Weinstock,G., Gibbs,R. and Venter,J.C.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (17-FEB-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA 3 (base 1 to 174163)
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Loulseged,H., Lozado,R.J., Lu,X., Lucier,A., Lucier,R., Luna,R., Ma,J., Maheshwari,M., Mapua,P., Martin,R., Martindale,A., Martinez,E., Massey,E., Mawhiney,E., McLeod,M.P., Meador,M., Mel,G., Metzker,M., Miner,G., Miner,Z., Mitchell,T., Wohabbat,K., Morgan,M., Morris,S., Moser,M., Neal,D., Newtson,J., Newtson,N., Nguyen,A., Nguyen,N., Nickerson,E., Nwokenkwo,S., Oguh,M., Okwuon,G., Oragunye,N., Oviedo,R., Pace,A., Payton,B., Peery,J., Perez,L., Peters,L., Pickens,R., Primus,E., Pu,L.L., Ouiles,M., Ren,Y., Rives,M., Rojas,A., Rojubokan,I., Rolfe,M., Ruiz,S., Savery,G., Scherer,S., Scott,G., Shen,H., Shooshtari,N., Sisson,I., Sodergren,E., Sonaike,T., Sparks,A., Stanley,H., Stone,H., Sutton,A., Svatek,A., Tabor,P., Tamerisa,A., Tamerisa,K., Tang,H., Tansey,J., Taylor,C., Taylor,T., Telfrod,B., Thomas,N., Thomas,S., Usmani,K., Vasquez,L., Vera,V., Villalon,D., Vinson,R., Wallington,S., Ward-Moore,S., Warren,R., Washington,C., Warlington,S., Wu,Y., Wu,Y.F., Zhou,J., Zorrilla,S., Nelson,D., Direct Submission
Submitted (19-DEC-2001) Human Genome Sequencing Center, Department
                                                                                                                                                                                                                                                                                                                                                                                                                Tamerisa, K.,
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CLONE LENGTH: This sequence does not necessarily represent the entire insert of this clone. Overlapping regions of clones are only sequenced and submitted once, so the sequence for the remainder of the insert may be found in the record for the adjacent clones. of Molecular and Human Genetics, Baylor College of Medicine, Baylor Plaza, Houston, TX 77030, USA On Dec 19, 2001 this sequence version replaced gi.6997282. gc-help@bcm.tmc.edu INFORMATION: http://www.hgsc.bcm.tmc.edu/ or email one

COMMENT

JOURNAL TITLE

Features listing.

Overlapping clones are noted at the beginning and end of the

STSs are identified using ePCR (Genome Res. 7:541-550) searches of a local database that includes entries from dbSTS, GDB, and local mapping efforts.

Repeats are identified using RepeatMasker (A. Smit and P. Green

unpublished.) for Human and Mouse sequences.
Genes and Region of sequence similarity are identified by BLAST (Nuc. Acids Res. 25:3389-3402) similarity (expect < le-34) to the EST and cDNA sequences. Genes demonstrate at least two exons flanked by consensus splice sites that maintained sequence continuity across the splice junctions. Sequences that are not identical matches are annotated as similar.

standard of double strand coverage with a minimum of 2 clones and 2 reads with no ambiguittes or 2 chemistries with a minimum of 2 clones and 3 reads with no ambiguittes. If the sequence quality for a region does not meet this standard, it will be indicated in the annotation as Low Coverage. SEQUENCING READ COVERAGE: Sequencing is completed to a minimum

QUALITY OF INDIVIDUAL BASES: This sequence meets stringent quality standards - estimated error rate less than 1 per 10,000 bases. Reports of lowest quality individual bases and measures of base quality are listed below. Description of the metrics can be found the URL: http://gc.bcm.tmc.edu:8088/quality.info/genbank.annotation

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alignment_scores:
                                                         ORIGIN
                                                                                                                                                        FEATURES
                                                                    BASE COUNT
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                                                                                                                                                                      QUALSTAT-REPORT
                                                                     51926
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/db_xref="taxon:7227"
/chromosome="3"
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                                                                    /clone="RP98-6C4"
36149 c 35565 g
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Quality:

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                                                                                                                                                                                GTTCATCGCATGGATGTATTTGGTGTACGACAAGCCTAGCGATCATCCCA
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Muscomorpus, 27.2, (bases 1 to 323461)
1 (bases 1 to 323461)
Adams,M.D., Celniker,S.E., Holt,R.A., Evans,C.A., Gocayne, ...,
Amanatides,P.G., Scherer,S.E., Li,P.W., Hoskins,R.A., Galle,R.F.,
Amanatides,P.G., Scherer,S.E., Richards,S., Ashburner,M., Henderson,S.N.,
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Drosophila melanogaster genomic
                                                                                                                                               Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Ins
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
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Zhong,F.N., Zhong,W., Zhou,X., Zhu,S., Zhu,X., Smith,H.O.,
Gibbs,R.A., Myers,E.W., Rubin,G.M. and Venter,J.C.
The genome sequence of Drosophila melanogaster
Science 287 (5461), 2185-2195 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           On Oct 9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rockville, MD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
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Brandon,R.C., Rogers,Y.H., Blazed,R.G., Champe,M., Pfeiffer,B.D.,
Wan,K.H., Doyle,C., Baxter,B.G., Helt,G., Nelson,C.R., Gabor
Miklos,G.L., Abril,J.F., Agbayani,A., An,H.J.,
Miklos,G.L., Abril,J.F., Agbayani,A., An,H.J.,
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                                      LFSSIGELESCKLYRDKYSGQSLGYGFVNYVRAEDAEKAVNTLNGLRLQNKYIKYSYA
RPSSESIKGANLYVSGLPKNLSQPDLEGMFASFGKIITSRILCDNISGLSKGVGFIRF
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join(15214 ..15403,15749...1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                         translation="MTNAMDIVKNGSANGSVDGSNDESRTNLIVNYLPQTMTQEEMRS/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /map="11D1-11D1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="CG4396"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000 this sequence version replaced gi:7292821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (21-MAR-2000) Celera Genomics, 45 West Gude Drive,
{	t RLAGALPSAGRIRYSPLAGDLLANSILPGNAMTGSGWCIFVYNLAPETEENVLWQLFG}
                                                                                                                                                                                                                                                                                                                                                                                                         /note="fne gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="fne"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="FLYBASE:FBgn0040222"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              oin(<15214. .15403,15749. .16006,16069. .16312,17722. .18091)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .>18091
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .16006,16069. .16312,17722.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .18046)
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SLDKVVKINAVEESTEKVDETHTTYBSYATYPSSSVYQOTYPDYKSSVTPKNDVTTQAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YDTDDPSFSLGPATDYDSDLPENFSPVPRYLENAAMNEGVIDMRNVDEELAEKEELMA
TVVSATMATNOKENRLECDLNFDGYLCWPRT PAGTYLSQYCPDFDVEGFNRKFLAHKTC
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SVYKSYSSSETPDDEEDEESTANPLNKSIKINAVSDPETIQNTTFATTPFPETTKGSF
                                                                                                                                                                                                                                                                                                                                                                       SGPESLVCAGAPGAQPSTFPSPCEVQRFRALTGINWEIIHENRCETLEVCPDNCQDQY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FVVSFLFCFANHDVTFAIRTLLNKLLPSLVTPPPAGSNTGQMATTTPSRELGV"
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47115. .471
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25443. .25533,26089. .2
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TKTT"
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,26089. .26389,26921. .>
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alignment_block:
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                           rpIleLeuGlySerPhePheTyrGlyTyrIleIleThrGlnIleProGly
  TGGTGCTCGGCAGTTTCTTCTATGGCTATGTGCTAACCCAAGTGCCCGGC
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TGGGCTGCGATTGGGTGTGGGTCACCTTTATGTTGGCCGGCGTGGGCTCT
                                                                                      CACGGTGGCCTCCGTGGTGCCATCACTGGGCCTGATTGGCATCATCTATG
                                                                                                                                                                                                                                                                                                        yrLeuGlySerTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAspAsn
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                                         leGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerThrThr
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SOURCE
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Location/Qualifiers
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                       Mus musculus vesicular glutamate AF324864
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                  rgValAsnLeuSerValAlaLeuValAspMetValAspSerAsnThrThr 114
                                                                                                         rAsnLeuAlaIleLeuAlaPhePheGlyPhePheIleValTyrAlaLeuA
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Eukaryota; Metažoa; Chordata;
Mammalia, Eutheria; Rodentia;
1 (bases 1 to 2528)
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Bai,L., Collins,J.F. and
Direct Submission
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Location/Qualifiers
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LTSTLNMLIPSAARVHYGCVIFVRILGGLVEGVTYPACHGIWSKWAPPLERSRLATS
FCGSYAGAVIAMPLAGILVOYTGWSSVFVYYOGSFGWNYMWHULLWSYSESFAKHPTITD
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AYFEEVFGFELSKVGMLSAVPHLVMTIIVPIGGQIADFLASKQILSTTTVRKIMNCG
FGMBATLLLVVGYSUTTRGVASTSTLVLAVGFSGFAISGENVNHLDIAPRYASILMGISN
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                                              TAAGGAGCAAGTTCTCTCAACAACTACAGTGAGAAAGATCATGAAT
                                                                      GTTTTTGGATTTGAAATCAGCAAGGTTGGCATGTTGTCTGCAGTCCCTCA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_pr:AB032435
                                                                                                                                                                                                                                                 Submitted (15-SEP-1999) Jun Takeda, Gunma University, Institute Molecular and Cellular Regulation, Laboratory of Molecular Genetics, Department of Cell Biology; 3-39-15, Showa-machi, Maeba Gunma 371-8512, Japan (E-mail: jtakeda@akagi.sb.gunma-u.ac.jp, Tel:81-27-220-8830, Fax:81-27-220-8889)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AB032435 3946 bp mRNA linear PRI 18-DEC-2001
Homo sapiens DNPI mRNA for differentiation-associated Na-dependent
inorganic phosphate cotransporter, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aihara,Y., Mashima,H., Onda,H., Hisano,S., Kasuya,H., Hori,T., Yamada,S., Tomura,H., Yamada,Y., Inoue,I., Kojima,I. and Takeda,J. Molecular cloning of a novel brain-type Na(+)-dependent inorganic phosphate cotransporter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae
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                                                                                 /gene="DNPI"
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414 .2162
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                      Na-dependent
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         111 erAsnThrThrLeuGluAspAsnArgThrSerLysAlaCysProGluHis 127
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              515 GCAAGACACCGGGGAGACAATCGAGCTGACGGAGGATGGGAAGCCCCCTAG 564
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leIleThrGlnIleProGlyGlyTyrValAlaSerLysIleGlyGlyLys 177
                                                                                                 TCCATCAGCAGCCAGAGTGCATTATGGATGTGTCATCTTTGTCAGAATAC 969
                                                                                                                             rProIleAlaAlaAspLeuGlyValGlyProLeuIleValLeuArgAlaL 211
                                                                                                                                                                                                                                 GCC.....AAATTCAACTG 769
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                                                                                                                                                                                                                                                                                                      TCATCACTCAGATTCCGGGAGGCTACATCGCGTCTCGGCTGGCAGCCAAC
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522 1916	laIleAsnValPheGlyAlaIlePhePheThrLeuPheAlaLysGlyGlu ::::::    :::      ::::::::::        TAGTCCACTATGGTGGAGTTATATTTTATGCAATATTTGCCTCAGGAGAG	506 1867
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489 1816	PheAlaThrIleProGlyMetValGlyProValIleAlaLysSerLeuTh :::   :::	473 1767
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456 1716	eSerThrThrLeuGlyGlyPheCysSerSerGlyPheSerIleAsnHisL:::::: !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	439 1667
439 1666	AlaGlyPheIleGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIl::::   ::::    ::::      ::::      :::::	423 1620
422 1619	rgIlePheSerLeuIleGlyMetIleGlyProAlaValPheLeuValAla::   ::::   ::::   ::::   ::::   ::   ::::   ::::   ::::   ::::    :::::	406 1570
406 1569	AAlaAspAsnLeuArgAlaLysTrpAsnPheSerThrLeuCysValArgA                :::    :::     :::	389 1520
389 1519	ScrleuProTyrLeuGlySerTrpLeuCysMetIleLeuSerGlyGlnAl::::::    :::	373 1470
372 1469	yrMetLysGluIleLeuArgPheAsnValGlnGluAsnGlyPheLeuSer    :::::   :::       ::::::   :::	356 1420
356 1419	sPheSerTyrAsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrT::    ::    :::	339 1370
339 1369	TrpValProIleLeuLysSerLeuProLeuTrpAlaIleValValAlaHi      :::::    :::   :::   :::    ::: TGGAGGAAGTTTTTACATCCATGCCAGTCTATGCAATAATTGTTGCAAA	323 1320
322 1319	ArgAsnGlnLeuSerSerGlnLysS        :::::::::::::::::::::::::::::::	311 1270
311 1269	ArgIleSerHisTyrGluLysGl    ::: 	294 1220
294 1219	GlyIlePheTrpPheLeuLeuTrpIleTrpLeuValSerAspThrProGl         :::	278 1170
277 1169	leCysTyrTyrMetAsnTrpThrTyrValPheTyrPhePheGlyThrIle :::	261 1120
261 1119	ralaGlyAlaGlnLeuGlyThrValIleSerLeuProLeuSerGlyIleI::::   :::     :::     ::: TTGTGGTTCCTATGCCGGAGCTGTGATTGCAATGCCTTTAGCTGGCATTC	244 1070
244 1069	SerSerTrpAlaProProLeuGluArgSerLysLeuLeuSerIleSerTy	228 1020

523 ValGlnAsnTrpAla 527 ||| |||||| 1917 AAACAACCCTGGGCA 1931

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1: Sp_archea:*
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3: Sp_fungi:*
4: Sp_human:*
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6: Sp_manma'
7: Sp_mhc:*
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1 MAAGAMTPPRPVQPARPGGF.....LFAKGEVQNWALNDHHGHRH 536
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

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Q9y2c5 homo sapien	Q96lhl homo sapien	061369 drosophi	Q9v7s5 drosophi	Q62634 rattus	Q9p2u7 homo sap	Q23514 caenorha	Q9p2u8 homo sap	Q920b7 mus mus	Q9ji12 rattus	Q9vdm0 drosophi	Q9vyg7 drosophi	Q9mzd1 ovis ari	Q9ugh0 homo sap	Q9nra2 homo sap	Description	

45 562	56	43 569		58						35 699.5		33 747					28 762	78			24 798.5			81	8	8	80	80
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	10 Q9FKV1	5 Q9W1Z3	5 Q9V9J0	5 Q9W1Z1	4 Q9н533	5 016923	5 Q9W1Z0	5 Q9V763	5 Q94886	11 Q921B2	5 Q9V334	10 082390	Ω	10 Q9SDI4	5 Q9VQC0	5 Q9V8N1	5 Q9V8N0	5 Q9V8M8	5 Q09932	5 Q9V905	4 Q9H531	5 Q9TZN7	5 Q9VR44	11 Q91WV5	5 Q9VPX2	5 Q9NKF8	5 Q9VJW8	5 Q9VKC9
023065 arabidopsis	Q9fkv1 arabidopsis		Q9v9j0 drosophila	Q9w1z1 drosophila		016923 caenorhabdi	Q9w1z0 drosophila	Q9v763 drosophila	Q94886 drosophila	Q921b2 mus musculu	Q9v334 drosophila	082390 arabidopsis	Q9v8m9 drosophila	Q9sdi4 oryza sativ	_	Q9v8n1 drosophila	Q9v8n0 drosophila		Q09932 caenorhabdi		Q9h531 homo sapien	Q9tzn7 caenorhabdi	Q9vr44 drosophila	Q91wv5 mus musculu	Q9vpx2 drosophila	Q9nkf8 drosophila	Q9vjw8 drosophila	Q9vkc9 drosophila

## ALIGNMENTS

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Best Loc
Matches
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Nat. Genet. 23:402-465(1999).
Nat. Genet. 23:402-465(1999).

-! SUBCLLULAR LOCATION: INTEGRAL MEME-
-! SIMILARITY: BELONGS TO THE SUGAR THE
EMBL; AJ387747; CAB62540.1; -.
InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.

Transmembrane.
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Q9UGHO;
Q1-MAY-2000
Q1-MAY-2000
Q1-MAY-2000
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MEDLINE=20047778; PubMed=10581036;
Verheijen F.W., Verbeek E., Aula N.
Joosse M., Peltonen L., Aula P., G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
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Similarity 100.0%;
95; Conservative 0;
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THE SUGAR TRANSPO
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Pred. No. 1.2e-200;
0; Mismatches 0;
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Fu C., Bardhan S., Cetateanu N.D., Lloyd S.R., Yan H., Cart Fu C., Bardhan S., Cetateanu N.D., Lloyd S.R., Yan H., Cart Shi E., Venkov C., Yakes M.F., Page D.L., H C.G.;
"Identification of a novel membrane protein from mammalian interact with the anti-pathoangiogenic compound CM101.";
submitted (MAR-2000) to the EMBL/GenBank/DBBJ databases.
EMBL; AF244578; AAF97770.1;
EMBL; AF244578; AAF97770.1;
SEQUENCE 495 AA; 54536 MW; 649D7C4A59B28272 CRC64;
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Eukaryota;
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01-OCT-2000 (TremBLrel.
01-OCT-2000 (TremBLrel.
MEMBRANE GLYCOPROTEIN SP
                                                                                                                                                                                                                                                                                                                                Mammalia; Eutheria; Ceta
Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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 241
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Cetartiodactyla;
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86.3%;
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Pred. No. 2.3e:
39; Mismatches
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actyla; Ruminantia; Pecora;
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annotation
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RA Adams N.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams N.D., Celniker S.E., Holt R.A., W., Hoskins R.A., Galle R.F.,
RA Adams N.D., Celniker S.E., Holt R.A., W., Honderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.H.C., Blazel R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.H.C., Blazel R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davles P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dun P.
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Hostin D., Houston K.A., Howland T.J., Mei M.-H., Libeywam C.,
RA Hostin D., Houston K.A., Howland T.J., Mei M.-H., Libeywam C.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Mount S.M., Way M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Railert K., Remington K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Purl V., Reese M.G.,
RA Rainer K., Sanders R.D.C., Scheeler F., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Yell N., Zhong F., Norther R., Venter E., Wang A.H., Wang X.,
RA Yell N., Zhong F., Norther R., Venter E., Wang A.H., Wang X.,
RA Yell R., Zhong F., Norther R., Weinstock G.M., Weissenbach J.,
RA Yell R., Shen H., Keller F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
Ra Yell R., Shen H., Keller S., Robin G.M., Venter J.C.,
Ra Zhao G., Zheng L.,
Ra Yell R., Shen H., Robin H., Robin H., Robin H., Robin H.,
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Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-JUN-2001 (TrEMBLrel.
CG4330 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ephydroidea; Dro
NCBI_TaxID=7227;
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Best Local S
Matches 208
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01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-DEC-2001 (TrEMBLrel. 19,
CG4288 PROTEIN (GH23975P).
CG4288.
MEDLINE-20196006; PubMed-10731132;
Adams M.D., Celniker S.E., Holt R.A.,
Amanatides P.G., Scherer S.E., Li P.W
George R.A., Lewis S.E., Richards S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -1- SUBCELLULAR LOCATION: INTEGRAL ME-
-1- SIMILARITY: BELONGS TO THE SUGAR
EMBL; AE003491; AAF48230.1; -.
FlyBase; FBgn0030452; CG4330.
InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
                                                                                                       Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; He
Pterygota; Neoptera; Endopterygota; Diptera;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                          Q9VDM0
                                                     SEQUENCE FROM N.A. STRAIN-BERKELEY;
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NCBI_TaxID=7227;
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                                                                                                                                                                                                                                        PRELIMINARY;
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Evans C.A.
V., Hoskins
Ashburner
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on update)
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                                                                                                                     Brachycera;
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               Gocayne J
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Stapleton M., Brokstein P., Hong L., Agbayani A., Carlson J., Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C., Nunco J., Pacleb J., Paragas V., Park S., Phouanenavong S., Wa Yu C., Lewis S.E., Rubin G.M., Celniker S.; Submitted (CCT-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY -!- SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY EMBL; AE003730; AAF55770.1; -. EMBL; AY060776; AAL28324.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FlyBase; FBgn0038799; CG4288.
InterPro; IPR003662; sub_transporter.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00083; sugar_tr; 1.
                                               143
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                                               HSLEMFLFVRIIEGFFEGVTFPGIHAVWARWSPPLERSRMASIAFAGNYAGTVVAMPCSG
                                                                                                                                     -DEPWDSKQKGLILSSFEYGYILTQELGGYIGTKIGGNIVFGTGIGSTAILTLLTPMAAS
IICYYMNWTYVFYFFGTIGIFWFLLWIWLVSDTPQKHKRISHYEKEYILSSLRNQLSSQK
                                                                     LGVGPLIVLRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVISLPLSG
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                                                                                                                                                                                                                                                                           RYNLAILAFFGFFIVYALRVNLSVALVDMVDSNTTLEDNRTSKACPEHSAPIKVHHNQTG
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Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.
A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
                                                                                                                                                                                                                                                                                                                                                35.0%;
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Pred. No. 7.4e-71;
93; Mismatches 149
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01-OCT-2000 (TrEMBLrel. 15, Last ann
DIFFERENTATION-ASSOCIATED NA-DEPENDE
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF271235; AAF76223.1; SEQUENCE 582 AA; 64575 M
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"Rat DNPI.";
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QILSTTTVRKIMNCGGFGMEATLLLVVGY-SHTRGVAISFLVLAVGFSGFAISGFNVNHL
                                                   WNFSTLCVRRIFSLIGMIGPAVELVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHL
                                                                                                                                            VAHFSYNWTTEYTLLTLLPTYMKEILRENVQENGFLSSLPYLGSWLCMILSGQAADNLRAK
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Pred. No. 5e-69;
3; Mismatches 1
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MEDLINE-21453279; PubMed-11432869;

Bai L., Xu H., Collins J.F., Ghishan F.K.;

Bai L., Xu H., Collins J.F., Ghishan F.K.;

"Molecular and functional analysis of a novel

"Molecular and functional analysis of a novel

glutamate transporter.";

J. Biol. Chem. 276:36764-36769(2001).

EMBL; AR324866; AALD8941.1; -.

SEQUENCE 582 AA; 64559 MW; 9F7A4F62E685A8
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Q920B7;
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                                                                DIAPSYAGILLGITNTFATIPGMVGPVIAKSLTPDNTVGEWQTVFYIAAAINVFGAIFFT
                                                                                                                    WNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHL
                                                                                                                                                     VANECRSWIETLLLISQPAYFEEVEGFEISKVGMLSAVPHLVMTIIVPIGGQIADFLRSK
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                                                                                                    QILSTTTVRKIMNCGGFGMEATLLLVVGY-SHTRGVAISFLVLAVGFSGFAISGFNVNHL
                                                                                                                                                                      VAHFSYNWTFYTLLTLLPTYMKEILRENVQENGFLSSLPYLGSWLCMILSGQAADNLRAK
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                                                  DIAPRYASILMGISNGVGTLSGMVCPIIVGAMTKNKSREEWQYVFLIAALVHYGGVIFYA
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J. Neurochem. 0:0-0(2000).
EMBL; AB032435; BAA92874.1; -.
EMBL; AB032435; BAA92874.1; -.
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Homo sapiens (Human).
Horvota; Metazoa; Chordata; Metazoa; Primates;
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Q9P2U8;
Q1-OCT-2000 (TrEMBLrel. 15, Created)
Q1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
Q1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
Q1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
Q1FERRENTIATION-ASSOCIATED NA-DEPENDENT INORGANIC PI
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TISSUE=BRAIN THALAMUS;
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APVC-CSA-----RYNLAILAFFGFFIVYALRVNLSVALVDMVDSNTTLEDNRTSKACPE 126
                   PVIAKSLTPDNTVGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNWA
                                                                                                TAVLTLETPIAADLGVGPLIVLRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAG
                                                 VVGY-SHTRGVAISFLVLAVGFSGFAISGFNVNHLDIAPRYASILMGISNGVGTLSGMVC
                                                             AAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMVG
                                                                                                                        RENVQENGELSSLPYLGSWLCMILSGQAADNLRAKWNESTLCVRRIESLIGMIGPAVELV
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Pred. No. 1.2e-68;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Waterston R., Gattung S., Le "The sequence of C. elegans of Submitted (JUL-2001) to the E
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Eukaryota; Metazoa; Nem
Rhabditidae; Peloderina
NCBI_TaxID=6239;
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  (TrEMBLrel.) (TrEMBLrel.) (TrEMBLrel.)
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cosmid ZK54.";
EMBL/GenBank/DDBJ
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Pred. No. 3.8e-67;
'9; Mismatches 154;
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elegans Sequencing Consortium.";
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Best Local :
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01.NOV-1996 (TrEMBLrel. 01, 0
01-NOV-1996 (TrEMBLrel. 19, 1
01-DEC-2001 (TrEMBLrel. 19, 1
BRAIN SPECIFIC NA+-DEPENDENT
                                                                                                                         Q62634
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Yamada S., Tomura H., Yamada Y., Inoue I., Kojima I., T
"Molecular cloning of a novel brain-type Na+-dependent
phosphate cotransporter.";
J. Neurochem. 0:0-0(2000).
EMBL; AB032436; BAA92875 1; -
SEQUENCE 560 AA; 61613 MW; C88DAFB34B6E45B6 CRC64;
                              Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Rode
SEQUENCE
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Mammalia; Eutheria;
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FROM
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                                                                                                                          PRELIMINARY;
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                                Chordata;
Rodentia;
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Primates;
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Tast annotation contains corransporter.
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Pred. No. 9.8e-67;
                              Craniata; Veri
Sciurognathi;
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                                 Vertebrata;
thi; Muridae;
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                                          Euteleostomi;
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                                 Murinae;
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Takeda J.;
nt inorganic
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Best Local S
Matches 190
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O9V7S5; O61364; O1-MAY-2000 (TrEMBLrel. 13, Created)
O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
O1-DEC-2001 (TrEMBLEL. 19, Last annotation update).
SEQUENCE FROM N.A. STRAIN=BERKELEY;
                                                                                                     Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; He
Pterygota; Neoptera; Endopterygota; Diptera;
Ephydroidea; Drosophilidae; Drosophila.
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Proc. Natl. Acad. Sci. U.S.A. 91:5607-5611(1994).
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).
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"Cloning and expression of a cDNA encoding a brain-specific Na(+)-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GEKQPWA 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TLCVRRIFSLIGMIGPAVELVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DGEESTDRT---PLLP----GAPRAEÄAPVCCSARYNLAILAFFGFFIVYALRVNLSVAL 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GEVQNWA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RYASILMGISNGVGTLSGMVCPIIVGAMTKHKTREEWQYVFLIASLVHYGGVIFYGVFAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SYAGILLGITNTFATIPGMYGPVIAKSLTPDNTVGEWQTVFYIAAAINVFGAIFFTLFAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRSWTFYLLLISQPAYFEEVFGFEISKVGLVSALPHLVMTIIVPIGGQIADFLRSRHIMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYNWTFYTLLTLLPTYMKEILRENVQENGFLSSLPYLGSWLCMILSGQAADNLRAKWNFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LLVSYESPALHPSISEEERKYIEDAIGESAKLMNPVTKFNTPWRRFFTSMPVYAIIVANF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IWSKWAPPLERSRLATTAFCGSYAGAVVAMPLAGVLVQYSGWSSVFYVYGSFGIFWYLFW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MWSSWAPPLERSKLLSISYAGAQLGTVISLPLSGIICYYMNWTYVFFFFGTIGIFWFLLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGGFICQKFAANRVFGFAIVATSTLNMLIPSAARVHYGCVIFVRILQGLVEGVTYPACHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PGGYVASKIGGKMLLGFGILGTAVLTLFTPIAADLGVGPLIVLRALEGLGEGVTFPAMHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VDMVDSNTTLEDNRTSKACPEHSAPIKVHHNQTGKKYQWDAETQGWILGSFFYGYIITQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DGRPVTTHTRDPPVVDCTCFGLPR------RYIIAIMSGLGFCISFGIRCNLGVAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTNVRKLMNCGGFGMEATLLLVVGY-SHSKGVAISFLVLAVGFSGFAISGFNVNHLDIAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF00083; sugar_tr;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               560 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
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                              (LONG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----HRGGHVVVQKAQ----FNWDPETVGLIHGSFFWGYIVTQI
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                                 AND
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                              SHORT ISOFORMS).
                                                                                                                                                                                                                                                                  COTRANSPORTER (PICOT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
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.5e-66;
                                                                                                                                                       Hexapoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                168;
                                                                                                                                 Brachycera;
                                                                                                                                                                                                                                                                PROTEIN) (CG8098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
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                                                                                                                                 Muscomorpha,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38;
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76 36

CFATRYFVTFMLFLGMANAYVMRTNMSVAIVAMV-NHTAIKSGEAEEYDDECGDRDIPI-CCSARYNLAILAFFGFFIVYALRVNLSVALVDMVDSNTTLEDNRTSK---ACPEHSAPIK 132 Matches Query Match Best Local

Similarity

32.7%; 41.1%;

Conservative

81;

Score 928.5; Pred. No. 9e-6 31; Mismatches

9e-66;

Length

176; 5

15;

Gaps

93

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RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Feiffer B.D., RA Wann K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., RA Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C.R., Baldwin D., RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I., RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I., RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Dev I., Dietz S.M., Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I., RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Dev I., Dietz S.M., RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., RA Dodson K., Evragelista C.C., Ferraz C., Ferriera S., Fleischmann W., RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M., Alley G., Gorrell J.H., Gu Z., Guan P., Harris M., Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Howland T.J., Hernandez J.R., Houck J., Lal Z., Kannison J.A., Ketchum K.A., Howland T.J., Harvitz S., Kulp D., Lal Z., RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lal Z., RA Liu X., Mattei B., McIntosh T.C., McIeod M.P., McPherson D.L., RA Merkulov G., Milshina N.V., Mobarry C., Morris J., McShrefi A., RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L., RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G., RA Ra Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M., Ra Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G., RA Ra Nelson D.R., Welson K.A., Wainsen M., Scheeler F., Shen H., Ra Nelson D.R., Welson M., Stupski M.P., Smith T., Ra Palazzolo M., Pittman G.S., Pan S., Pollard J., Wang A.H., Wang X., Ra Palazzolo M., Welson D.R., Welson D.R., Welson D.R., Wels
                                                                                                     TRANSMEM TRANSMEM
                                                                                                                                                                                                                                               TRANSMEM TRANSMEM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases.

-:- SUBCELLULAR LOCATION: INTEGRAL MEMBRARE PROTEIN.
-:- ALTERNATIVE PRODUCTS: TWO ISOFORMS; LONG ISOFORM (SHOWN SHORT ISOFORM; ARE PRODUCED BY ALTERNATIVE SPLICING.
EMBL; AE003806; AAF57968.1; --
EMBL; AE003806; AAF57969.1; --
EMBL; AF022713; AAD09148.1; --
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Amanatides P.G., Scherer S.E., 1
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                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           FlyBase;
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                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                             PF00083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           FBgn0024315; Picot.
                                                                                                                                                                                                                                                                                                                                                                                                                          IPR003662; sub_transporter.
   529
                                                                                                                                                                                                                                                                                                                     splicing;
                                                                                                     148
202
232
232
338
429
466
   AA;
                                                                                                                                                                                                                                                                                                                                                                               sugar_tr;
   58372
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POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
MPFRRSSLNHRHRDGHYLVWNQRNLHESLEQQPQR -> MS ASKEAICGSTEKDLEKPALG (IN SHORT ISOFORM). 07B89A52D5081EFB CRC64;
                                                                                                                                                                                                                                                                                POTENTIAL.
                                                                                                                                                                                                                                                                                                                        POTENTIAL.
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                                                                                                        Query Match
Best Local S
                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                    061369;
061369;
01-AUG-1998
01-AUG-1998
01-DEC-2001
                                                                                                                                                                  TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                PUTATIVE PICOT.
                                                                                                                                                                                                                       Da Lage J.-L., Alland C.;
Submittled (SEP-1997) to the EMBL/GenBank/DDBJ
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PR
EMBL; AF024691; AAC39088.1; -.
F1yBase; FBg00024472; Dana\Picot.
InterPro; IPR003662; sub_transporter.
Pfam; PF00083; Sugar_tr; 1.
                                                                                                                                                                                                                                                                                                                                                  Drosophila ananassae (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda;
Pterygota; Neoptera; Endopterygota; Diptera; Brachyce
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-TAI 13-1610;
                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                               Transport;
                          144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             452
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                                                           Local Similarity 41.7 hes 188; Conservative
   57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                Н
                                                                     LAFFGFFIVYALRVNLSVALVDMVDSNTTLE--DNRTSKACPEHSAPIKVHHNQTGKKYQ
MLFLGMANAYVMRTNMSVAIVAMV-NHTAIKSGEEEYDDECGDRDIPI--DDSQDG-EFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LISDPSKPMMGQWQIVFFIAAFVYIICGTFYNIFGSGERQYW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LTPDNT----VGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSL-RNQLSSQKSVPWVPILKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEILRFNVQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IISMPLSGLLAEYGFDGGWPSIFYVFGIVGTVWSIAFLIFVHEDPSSHPTIDEREKKYIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LVPVAARGGGVWGLCAVRFIQGLGEGPIVPCTHAMLAKWIPPNERSRMGAAVYAGAQFGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FTPIAA-DLGVGPLIVLRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAGAQLGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -DDSQDG-EFAWSSALQGYILSSFFYGYVITQIPFGILAKKYGSLRFLGYGMLINSVFAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VHHNQTGKKYQWDAETQGWILGSFFYGYIITQIPGGYVASKIGGKMLLGFGILGTAVLTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NGLLSSLPYLAMWLFSMFISVVADWMISSKRFSHTATRKLINSIGOYGPGVALIAASYTG
                                                                                                                                                      ; Transmembrane.
187 207
187 312
312
383 403
420 440
483 AA; 52885
                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. 07, Created)
(TrEMBLrel. 07, Last sequence update)
(TrEMBLrel. 19, Last annotation updat
DRGANIC PHOSPHATE COTRANSPORTER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                       32.3%;
                                                                                                                                                       52885
                                                                                                                                                       MW;
                                                                                            82;
                                                                                                                                                    POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
6832750611B775F0 (
                                                                                            Score 917; DB 5;
Pred. No. 6.7e-65;
2; Mismatches 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    483
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                                                                                             167;
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                                                                                                                                                                                                                                                                                                                                                              Brachycera;
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                                                                                                                 Length
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                                                                                                                                                       CRC64;
                                                                                             Indels
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                                                                                            Gaps
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
01-DEC-2001 (TSUBLIFEL 19, Last annotation update)
DJ139G21.1.2 (SODIUM PHOSPHATE SOLUTE CARRIER FAMILY (ISOFORM 2)) (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AL138726;
NON_TER 1
SEQUENCE 466 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (JUL-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q96LH1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
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239
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                                                                                                                                                                                                                 189
                                                                                                                                                                                                                                                              59
                                                                                                                                                                                                                                                                                                                                            SSLRNQLSSQ-KSVPWVPILKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEILRFNVQE
                                                                                                                                                                    PIKVHHNQT-GKKYQWDAETQGWILGSFFYGYIITQIPGGYVASKIGGKMLLGFGILGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SSLAQQPSSPGRAVPIKAMVTCLPLWAIFLGFFSHFWLCTIILTYLPTYISTLLHVNIRD
                                                                                FGSFIILCVGGLISQALSWPFIFYIFGSTGCVCCLLWFTVIYDDPMHHPCISVREKEHIL
                                                                                                        SISIKEFDTKASVYQWSPETQGIIFSSINYGIILTLIPSGYLAGIFGAKKMLGAGLLISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QWQIVFFIAAFVYIICGTFYNIFGSGERQFW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IGVGLNGGIYSGFKINHLDLTPRFAGFLMSITNCSANLAGLLAPIAAGNLISDPSKPVMG
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                                                                                                                                                                                                                                                                                                                                                                                                                                     183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50664 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    31.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                   92;
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 895; DB Pred. No. 3.6e 92; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F64CE5FC89E5FC3D
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17 MEMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                12;
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RESULT 15
Q9Y205
AC Q9Y205
AC Q9Y205
AC Q9Y205
DT 01-NOV
DT 01-DEC
DE NA,PO4
OS HOMO S
OC EUKARY
OC MAMMAI
OX NCBIT
RN [1]
CC CIST
RT HOMO
RA Shibut
RT TISOLA
RT HOMO
RA Shibut
CC -!-SU
CC -!-SU
CC -!-SU
DR LINERY
DR FFEMBL;
KW Transm
SQ SEQUEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 176; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
NA/PO4 COTRANSPORTER HOMOLOG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transmembrane.
SEQUENCE 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9Y2C5
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   391
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                                                                                                                                                                                                                                                                                       | LTLFTPIAADLGVGPLIVLRALEGLGEGVTFPAMHAMWSSWAPPLERSKLLSISYAGAQL 249
                   DYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMYGPVIAKSL 488
                                                                                                                                                                                                                                                                                                                                                                                                                          CSARYNLAILAFFGFFIVYALRVNLSVALVDMVDSNTTLEDNRTSKACPEHSAPIKVHHN 136
                                                               GILSALPFVVGCICIILGGLLADFLLSRKILKLITIRKLFTAIGVLFPSVILVSLPWVRS
                                                                                                                                                                                                    GSFIVLLAGGLLCQTIGWPYVFYIFGGIGCACCPLWFPLIYDDPVNHPFISAGEKRYIVC 270
                                                                                                                                                                                                                         GTVISLPLSGIICYYMNWTYVFYFFGTIGIFWFLLWIWLVSDTPQKHKRISHYEKEYILS 309
                                                                                                                                                                                                                                                                                                                                                            QTGKK-----YQWDAETQGWILGSFFYGYIITQIPGGYVASKIGGKMLLGFGILGTAV 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMYGPVIAKS 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GFLSSLPYLGSWLCMILSGQAADNLRAKWNFSTLCVRRIFSLIGMIGPAVFLVAAGFIGC 428
                                                                                                                                  SLAQQDCSPGWSLPIRAMIKSLPLWAILVSYFCEYWLFYTIMAYTPTYISSVLQANLRDS
                                                                                                                                                               SLRNQ-LSSQKSVPWVPILKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEILRFNVQEN 368
SHSMTMTFLVLSSAISSFCESGALVNFLDIAPRYTGFLKGLLQVFAHIAGAISPTAAGFF 450
                                                                                                                                                                                                                                                                     LTLFIPLAANAGVALLIVLRIVQGIAQVMVLTGQYSIWVKWAPPLERSQLTTIAGSGSML 210
                                                                                                                                                                                                                                                                                                                                       ETLKEFKAMAPAYDWSPEIQGIILSSLNYGSFLAPIPSGYVAGIFGAKYVVGAGLFISSF 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LTPDNTVGEWQTVFYIAAAINVFGAIFFTLFAKGEVQNWA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  497 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30.9%; Score 876; DB 4; larity 37.8%; Pred. No. 1.3e-61; Conservative 98; Mismatches 182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54055 MW;
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ISQDSEFGWRNVFLLSAAVNISGLVFYLIFGRADVQDWAKEQTFTH 496
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Search completed: Job time: 167 sec July 15, 2002, 08:25:02

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Minimum
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Maximum Match 100%
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Sheep GBS toxin re
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Human/Sheep consen
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Human sodium depen
Human polypeptide
Human polypeptide,
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Partial human GBS
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Human sodium-depen	AAW69971	19	401	21.7	615.5	0.
0	AAW78920	19	401	21.7	615.5	
Drosophila melanog	ABB64689	22	495	22.7	643	w
Human AFP protein	AAG81307	22	124	•	653	~
Human haemochromat	AAW78919	19	436	٠	686	_
Drosophila melanog	ABB64935	22	524	•	696.5	0
Novel human diagno	ABG02032	22	256	25.0	708	w
Drosophila melanog	ABB58659	22	449	٠	729	ω
	AAG29916	21	395	•	731	7
	AAG29914	21	519	•	747	U1
dopsis	AAG29915	21	512		747	01
3	ABG12999	22	343	•	755	-
	ABB70143	22	462	•	756.5	ω
Drosophila	ABB59401	22	560	٠	762	~
Drosophila	ABB70144	22	491	•	762	_
Drosophila	ABB67155	22	475		762	_
Drosophila	ABB70142	22	497	27.6	782.5	Ψ
Drosophila mel	ABB64710	22	465	•	798	w
Eat-4 prote	AAW88523	20	576	•	808	7
	ABB59580	22	493		811	٥ı
	ABB60925	22	512	•	821.5	Ů.
	ABB64204	22	481	29.6	838.5	_
	ABB61407	22	496	•	852.5	w
	ABB62841	22	479	30.2	856	~
	ABB63684	22	529	32.7	928.5	
Drosophila melanog	ABB67013	22	516	32.7	928.5	_
Human protein sequ	AAM25685	22	194	33.1	939	_
Human sodium-lithi	AAW70500	19	560	33.1	940	w
	AAW05148	17	560		940	7
Human polypeptide	387	22	567	•	941	O١
(D)	AAM79273	22	582	•	959.5	01
	58	22	502	35.0	992	-
Drosophila melanog	605	22	502	35.0	992	w
Drosophila melanog	ABB58701	22	559	35.1	996.5	~

## ALIGNMENTS

AAY45089 standard; Protein; 536

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Human 31-MAY-2000 AAY45089;

GBS

toxin receptor (HP59). (first entry)

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                                            Modified-site
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/note= "Asn is N-glycosylated"
112..115
/note= "Asn is N-glycosylated"
118..121
/note= "Asn is N-glycosylated"
        /note= "Ası ...
136..139
/note= "Asn is N-glycosylated"
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138..141
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    /note=
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    "Asn is N-glycosylated"
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                     22-JUL-1998;
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                                     99WO-US16676
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/note= "Putative
317..320
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213..218
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/note= "Asn
398..401
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138..140
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23..25
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468..473
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250..255
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246..251
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167..172
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
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                                                                                                                                                                                                                                                                                                                                                                                   The present sequence is full length group B beta-haemolytic Streptococci (GBS) toxin receptor protein, HP59 from human. The present invention relates to a method for preventing or attenuating a patho-angiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; group B beta-haemolytic Streptococci toxin receptor; GBS; HP59; cytostatic; vulnerary; antiatherosclerotic; osteopathic; vasotropic; prevention; attenuation; pathoangiogenic condition; cancer; scar; wound healing; gliosis; nerve injury; chronic wound; reperfusion injury; keloid; rheumatoid arthritis; atherosclerosis; osteoarthritis; psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
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pathological vascularisation; cancer metastases; angiogenesis;
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antigenic peptide"
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rheumatoid arthritis; psoriasis; neural injury;
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25-APR-2000;
09-JUL-2000;
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03-AUG-2000;
                  The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activiny, hinbihin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
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tissues is used to diagnose pathological vascularisation, e.g. detecting cancer metastases. GBS toxin receptors are useful for conditions associated with pathological angiogenesis or neovascularisation (specifically cancer, reperfusion injury, sciduring wound healing, keloids, chronic inflammation (rheumatoid
                                                                                                                                 The present sequence is sheep GBS (group B beta-haemolytic streptococci) toxin receptor (SP55). Sheep GBS toxin receptor is an integral protein with seven transmembrane domains. Expression vectors comprising the coding region can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor is express.
                       arthritis or psoriasis) or neural injury), and to raise specific antibodies used for treating early onset disease. Inhibitors of treating pathological or hypoxia-induced endothelial cell proliferation and migration.
Sequence
                                                                                                                                                                                                              Claim 10;
                                                                                                                                                                                                                                   New polynucleotide encoding mammalian receptor for streptococcus toxin, useful for diagnosis and treatment of, e.g. pneumonia in neonates - \!\!\!
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Matches 427
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal administering group B beta-hemolytic Streptococci toxin receptor fragment
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                               FLLWIWLVSDTPQKHKRISHYEKEYILSSLRNQLSSQKSVPWVPILKSLPLWAIVVAHFS
                                                                                                                                                                                                                                           MRSPVRDLARNDGEESTDRTPLLPGAPRAEAAPVCCSARYNLAILAFFGFFIVYALRVNL 101
 YAGILLGITNTFATIPGMVGPVIAKSLTPDNTVGEWQTVFYIAAAINVFGAIFFTLFAKG
                                                                                                                                                                       filwiclvsdtpethktitpyekeyilsslknqlssqksvpwipmlkslplwaivvahfs
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427; Conserv
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GBS toxin receptor"
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                                                                                                                                    toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating conditions associated with pathological angiogenesis or neovascularisation (specifically cancer, reperfusion injury, scarring during wound healing, keloids, chronic inflammation (rheumatoid arthritis or psoriasis) or neural injury), and to raise specific antibodies used for treating early onset disease. Inhibitors of this receptor are useful for treating pathological or hypoxia-induced endothelial cell proliferation and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo
Ovis
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                                                                                                                                                                                                                                                                                                                 -haemolytic streptococci) toxin receptor. Expression vectors comprising the coding region can be transformed into host cells to express GBS
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group B beta-haemolytic streptococci; pat]
                                                                                  Sequence
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                                                                                                                                                                                                                                                                                                                                                                                               Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                               New polynucleotide encoding mammalian receptor for streptococcus toxin, useful for diagnosis and treatment of, e.g. pneumonia in neonates - \,
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                                                                                                                                                                                                                                                                                                                                                         sequence is the human/sheep consensus GBS (group
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    Score 1698; DB 21; Pred. No. 3.3e-166;
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                                        Human Na-dependent phosphate cotransporter 35
                                                                                N-PSDB;
                                                                                                                                                                                                                    06-DEC-1999;
                                                                                                                                                                                                                                                         06-DEC-1999;
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AAH79234
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AAM40745
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Matches 314
       25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
14-SEP-2000;
19-OCT-2000;
29-NOV-2000;
                                                                                                                                                                   Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis. inflammatic leukaemia.
                                                                       21-JAN-2000;
                                                                                          26-DEC-2000;
                                                                                                            26-JUL-2001
                                                                                                                              WO200153312-A1
                                                                                                                                                Homo
                                                                                                                                                                                                                                  Human polypeptide
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                                                                                                                                                                                                                                                                                         AAM40745
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                                                                                                                                                                                                                Human; nootropic;
                                                                                                                                                                                                                                                    22-OCT-2001
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                                                                                                                                               sapiens
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       2000US-0488725.

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2000US-0653450.

2000US-0652191.

2000US-0693036.

2000US-0727344.
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C.N.S disorders.
Note: The sequence data for this patent did
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system disease, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tang
Wang
Zhao
             Human polypeptide,
                                       06-NOV-2001
                                                                                       AAM93914 standard;
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Wang Z,
, Zhou P,
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                                   Query Match
Best Local S
Matches 190
                                                                                                                                                                     capable of detecting 1000 or more genes from Drosophila. The inventuaseful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL101840-ABL16175) and the encoded proteins
                                                                                                                     The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                Sequence
                                                                                                                                                                                                                                              The invention relates to an isolated nucleic acid detection
                                                                                                                                                                                                                                                                   Disclosure; SEQ ID NO 8367; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                        genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila; developmental
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                                                                                                                                                                                                                                                                                                                                                                                 Venter JC,
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11-JUL-2000;
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                                               Local Similarity
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from Drosophila and
melanogaster
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2000US-0614150
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                                               Score 992;
Pred. No. 2
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The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invent useful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of

invention

and 18

insecticides, therapeutics and pharmaceutical drugs.

Disclosure;

SEQ

ij NO

24411;

21pp + Sequence Listing; English

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RESULT
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New isolated nucleic agenes from Drosophila interactions -
                                                                N-PSDB;
                                                                                                           Venter JC,
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11-JUL-2000;
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03-FEB-2000; 2000US-0496914.
27-APR-2000; 2000US-0560875.
20-JUN-2000; 2000US-0598075.
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01-SEP-2000;
15-SEP-2000;
20-OCT-2000;
30-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAM78323-AAM80302) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activin/inhibin activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
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## ALIGNMENTS

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was primed with a NotI-oligo(dT) primer. Five prime end
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Life Technologies. Contact: Feng Liang Life Technologies,
a division of Invitrogen 9800 Medical Center Drive
Rockville, Maryland 20850, USA Fax: (1) 301 610 8371
Email: fliang@lifetech.com URL:
http://fulllength.invitrogen.com"
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                                                                                                                                                       CCATGCATGCCATGTGGTCTTCTTGGGCTCCCCCCTCTTGAAAAGAAGCAAACTTCTTAGCA
                                                                                                                                                               ccatgcatgccatgtggtcttcttgggctccccctcttgaaagaagcaaacttcttagca
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ACAACTGGRCTTTTTATACTTTATTG
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Pred. No. 3.2e-187;
1; Mismatches 1;
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                  attgtgtaagcattctatgtctttttttaattgtacttgtattagatttttaaggcctat
   ATTGTGTAAGCATTCTATGTCTTTTTTAATTGTACTTGTATTAGATTTTTAAGGCCTAT
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3201 Carnegie Ave,
Tel: 216 431 9900
Fax: 216 361 9596
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1 (bases 1 to 787)

Harrington,J.J., Sherf,B., Rundlett,S., Jackson,P.D., Perry,R., Cain,S., Leventhal,C., Thornton,M., Ramachandran,R., Whittington,J., Lerner,L., Costanzo,D., McBiligott,K., Boozer,S., Mays,R., Smith,E., Veloso,N., Klika,A., Hess,J., Cothren,K., Lo,K., Offenbacher (J., Danzig,J. and Ducar,M.

Creation of genome-wide protein expression libraries using random activation of gene expression

Nat. Biotechnol. 19 (5), 440-445 (2001)
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Email:
High q
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Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone_lib="athersys RAGE Library"
/cell_line="HT1080"
/note="See 'Creation of Genome-wide Protein Expression
/note="See 'Creation of Genome-wide Protein Expression',
Nature Blotechnology, in press. Note that even though the
cell type indicated is HT1080, since a random activation
method was used, these sequence tags are not necessarily
expressed in HT1080 under normal circumstances."
a 166 c 154 g 253 t
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Pred. No. 2.8e-147;
0; Mismatches 6;
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BI907284
BI907284.1 GI:
EST.
                                                                                                                                                                                Email: cgapbs-r@mail.nih.gov  
Tissue Procurement: Life Technologies, Inc.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                               Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalia; Butheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 754)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect
                                                                                                                                              http://image.llnl.gov
http://image.llnl.gov
plate: LLAM11534 row: d column:
                                                                                                                                                                                                                                                              Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
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603063858F1 NIH_MGC_118
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                                                                                                                                     quality sequence stop:
Location/Qualifiers
                                                      /organism="Homo sapiens"
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/clone="IMAGE:521766"
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/lab_host="DH10B"
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                                         BF971208
602273220F1 NIH_MGC_84
                                 mRNA sequence.
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Query Match
Best Local Similarity 99.7
Matches 748; Conservative
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             ctctttctggaataatttgctactatatgaattgg
                                                             tttttatggctacatcacacacagattcctggaggatatgttgccagcaaaataggggg
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CTCTTTCTGGAATAA-TTGCTACTATATGAATTGG
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                                                                                                                      agaataataaaatgaactgtgtttaattatgaataatatgtaagctaggacttctacttt 2088
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Eukaryota; Me
Mammalia; Eut
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Plate: LLAM10003 row: h column: 05
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              High quality sequence stop: 699.
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National Institutes of Health, Mammalian
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/lab_host="DHIOB (phage-resistant)"
/note="Organ: adrenal gland; Vector: pCMV-SPORT6; Site_1:
NotI; Site_2: SalI; Cloned unidirectionally; oligo-dT
primed. Average insert size 1.229 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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/clone_lib="NIH_MGC_84"
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/db_xref="taxon:9606"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
Tissue Procurement: ATCC
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Plate: LLAM9570 row: e column:
High quality sequence stop: 697.
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National Institutes of Health, Mammalian
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                                                                                                                                                                                                                                                                                                                                                       /tissue_type="adenocarcinoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: colon; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally. Primer: Oligo d
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Technologies. "
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/clone_lib="NIH_MGC_65"
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                                                                                                                                                                                     Contact: Robert Strausberg, Ph.D.

Email: cgapbs r@mail.nih.gov

Tissue Procurement: CLONTECH Laboratories, Inc.
CDNA Library Preparation: CLONTECH Laboratories, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 689)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
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602464241F1 NIH_MGC_75 Homo sapiens
                                                                                                            http://image.llnl.gov
Plate: LLCM1330 row: b column:
High quality sequence stop: 687.
Location/Qualifiers
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/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4592171"
/clone_lib="NIH_MGC_75"
/lab_host="DH10B (T1 phage-resistant)"
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s cDNA clone IMAGE:4592171
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RESULT BG290613 LOCUS

DEFINITION ACCESSION

BG290613

BG290613 965 bp n 602388889F1 NIH\_MGC\_93 Homo sapiens mRNA sequence.

mRNA

cDNA clone IMAGE: 4517662

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ORGANISM
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             ctagatgataattctcaggtactgataaacacctgttgttgttcactttcctcataaaaa
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CTAGATGATAATTCTCAGGTACTGATAAACACCTGTGGTTGTACACTTTGCTCATAAAAA
                                                          AGGTTCACATACCTGCCTGCTAGTCGGGCAACATGAAGTAGGACAGTTCTGTTGATTTTT
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                                                                                                                                                                                                                                         TTTTAATTGTACTTGTATTAGATTTTTAAGGCCTATAATCATGAAATATCACTAGTTGCC
                                                                                                                                                                                                                                                                                                                                                           cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (ILN DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLAMI0411 row: a column: 23 High quality sequence stop: 634. Location/Qualifiers
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Tissue Procurement: ATCC
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EST.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         National Institutes of Health,
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/db_xref="taxon:9606"
/clone="IMAGE:4517662"
/clone="IMAGE:4517662"
/clone="ILb="NIH_MGC_93"
/tissue_type="transitional cell papilloma, cell line"
/lab_host="DH10B (phage-resistant)"
/note="organ: bladder; Vector: pcMV-SPORT6; Site_1: NotI;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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Tissue Procurement: ATCC
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National Institutes of Health, Mammalian
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High quality sequence stop: 676.
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Contact: Robert Strausberg, Ph.D.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
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                    /tissue_type="adenocarcinoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: colon; Vector: pcMV-SPORT6; Site_1:
Site_2: Sall; Cloned unidirectionally. Primer: Ol
Average insert size 1.8 kb. Library constructed
Technologies. "
                                                                                                                        /clone="IMAGE:3847279"
/clone_lib="NIH_MGC_65"
                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
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                                                                                                                                                                mRNA sequence.
BF676817
BF676817.1 GI
EST.
         Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONETECH Laboratories, Inc.
cDNA Library Preparation: CLONETECH Laboratories, I
cDNA Library Arrayed by: The I.M.A.G.E. Consortium
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution informat
                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalla; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 626)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collections (1999)
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602084380F1 NIH_MGC_83
                                                                      Contact: Robert Strausberg,
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Site_1: Sfil (ggccgcctcggcc); Site_2: Sfil (ggccgcttggcc); Site_3: Sil (ggccgcttggcc); Site_3: Sil (ggccgcttggcc); Site_2: Sfil (ggccgcttggcc); Site_3: Sil (ggccgctggcc); Site_3: Sequence: S'-ANTCTACAGGCCANTATGGCC-3' and 3' adaptor sequence: S'-ANTCTACAGGCCAGGCGCCACATG-dT(30)BN-3'
(where B = A, C, Or G and N = A, C, G, Or T). Average insert size 1.4 kb (range 0.5-4.0 kb). 14/15 colonies contained inserts by PCR. This library was enriched for full-length clones and was constructed by Clontech Laboratories (Palo Alto, CA)."

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                                                                                              tacactattcgccaaaggtgaagtacaaaactgggctctcaatgatcaccatggacacag 1866
                                                                                                                                                    TACACTATTCGCCAAAGGTGAAGTACAAAACTGGGCTCTCAATGATCACCATGGACACAG
                                                                                                                                                                                                                                                                                                          ATTCCAGGAATGGTTGGGCCCGTCATTGCTAAAAGTCTGACCCCTGATAACACTGTTGGA
CCTCAAAGTGCCTTCTGTATTGTGTAAGCATTCTATGTCTTTTTTAATTGTACTTGTAT
                                                                          647;
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Contact: Robert Strausberg, Ph.D.
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NIH-MGC http://mgc.nci.nih.gov/
National Institutes of Health, 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: cgapbs-r@mail.nih.
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Location/Qualifiers
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CA). Note: this is a NIH_MGC Library."
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/clone_lib="NIH_MGC_75"
/lab_host="DH10B (TI phage-resistant)"
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                                                                                                                                                                                                                                                                   DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM12008 row: m column: 21
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Tissue Procurement: DCTD/DTP
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          /tissue_type="mammary adenocarcinoma, cell line"
/lab_host="DH10B (phage-resistant)"
/note="Organ: breast; Vector: pCMV-SPORT6; Site_1: NotI
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.383 kb. Library enriched for
full-length clones and constructed by Life Technologies
Note: this is a NIH_MGC Library."

a 142 c 147 g 231 t
                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:5395772"
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                    Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@nail.nih.gov
Tissue Procurement: DCTD/DTP/Gazdar
CDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.lnh.gov
                                                                                                                                                                                                                                                   BE878141
BE878141.1
                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 931) NIH-MCC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collections (1999)
                                                                                                                                                                                                                                                                             mRNA
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601487630F1 NIH_MGC_69
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Homo sapiens
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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/db_xref="taxon:9606"
/clone_lib="NH_MGC_69"
/clone_lib="NIH_MGC_69"
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/lab_host="PH10B (phage-resistant)"
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Site_2: Sall; Cloned unidirectionally. Primer: Oligo dT
Site_2: Sall; Cloned unidirectionally. Primer: Oligo dT
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Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov
Plate: LLCML019 row: m column: 11
High quality sequence stop: 537.
Location/Qualifiers
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Tissue Procurement: ATCC
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Contact: Robert St
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                                                                                                                                                                                                                                                                                                                                      641;
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http://image.llnl.gov
Plate: LLAMI1889 row: l column:
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1 (bases 1 to 801)
NIH-WCC http://mgc.nci.nih.gov/
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tissue Procurement: Lothar Hennighausen Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (1999)
Contact: Robert Strausberg,
Email: cgapbs-r@mail.nih.go
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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a 200 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note-"Organ: mammary; Vector: pCMV-SPORT6; Site_1: NotI; Site_2: SalI; Cloned unidirectionally, Primer: Oligo dT. Average insert 2.5 kb. Library constructed by Life Technologies, catalog # 12018-016. Investigators providing samples: Lothar Hennighausen/Priscilla Furth, NIH Reference for transgenic model: Li et al., Cell Growth and Differentiation 7, 3-11 (1996). Note: this is a NCI_CGAP
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/lab_host="DH10B"
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                                                                                                                                                                                               Contact: Douglas Melton, Klaus H. Kaestner, & Hiroshi
Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Avo
                                                                                                                                                                                                                                                                           Unpublished (2000)
Other_ESTs: ig38h05.x1
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, Jackson,Y. and Bowers,Y.
Endocrine Pancreas Consortium
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1 (bases 1 to 524)
                                                                                       Email: dmelton@biohp.harvard.edu
Library was constructed by Dr. Hiroshi :
Washington University Genome Sequencing
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                                                  obtaining a clone please contact: (hinoue@im.wustl.edu)
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Eutheria; Primates; Catarrhini; Hominidae;
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                                                                       Dr.
                                                                   Hiroshi Inoue
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XhoI site was destroyed after directional Cloning.
Amplified once Contact information: Hiroshi Inoue, MD,
Metabollsm Div. (Alan Permutt Lab), Washington University
School of Medicine, Box 8127, 660 South Euclid Ave., St.
Louis, MO 63110, E-mail: hinoue@imgate.wustl.edu, Tel:
314-362-1916, Fax: 314-747-2692."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .524
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="HR85 islet"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Organ:.Pancreas; Vector: pBluescript SK(-)
NotI; Site_2: XhoI; cDNA made by oligo-dT priming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="Purified pancreatic islet"
/lab_host="DH10B"
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Pred. No. 1.4e-95;
0; Mismatches 0;
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Search completed: July Job time: 7546 sec 15, 2002,

Page 12

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Result
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Maximum Match 100%
Listing first 45 summaries
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| SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA1981.DAT:*
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Full length human Human group B beta Partial human GBS Human full:length Human AST coding s Human sodium depen Sheep GBS toxin re Sheep group B beta Human polynucleoti
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immune/haema	Human	AAK82628	22	48203	8.4	245.6	45	
immune/haema	Human	AAK81663	22	48203	8.4	•	44	O
immune/ha	Human	AAK70161	22	48203	8.4	•	43	
digestive sy	Human	AAK89370	22	31952	8.4	•	42	C
n reproductive	Human	AAL05708	22	27154	8.4	٠	41	
reproductive	Human	AAL05706	22	19371	8.4	245.6	40	
immune/haema	Human	AAK67753	22	393	8.4	٠	39	
immune/haema	Human	AAK67752	22	393	8.4		38	
immune/haema	Human	AAK67754	22	384	8.4	•	37	
_	Human	AAS43104	22	325791	8.4	•	36	
_	Humar	AAK80499	22	3178	•	•	ω 5	O
_	Humar	AAK80500	22	3178	٠	•	34	a
-	Humar	AAK83192	22	3608		•	33	
immune/haema	Humar	AAK74891	22	3608		•	32	
_	Humar	AAK67271	22	3608		٠	31	O
_	Humar	AAK52406	22	3422		249.8	30	
immune/haema	Humar	AAK85652	22	1995	•	•	29	
immune,	Human	AAK85653	22	1992	8.6	250.6	28	
breast canc	Human	AAL24174	22	433		251	27	o
digestive sy	Human	AAK90223	22	3407	٠	253.2	26	
Genomic sequence #	Genon	AAS39852	22	3407		253.2	25	
breast cance	Human	AAL24574	22	267		257	24	c
	Human	AAL22435	22	264		261.4	23	O
	Human	AAZ14190	20	300	٠	292	22	
	Human	AAL13566	22	349		327.2	21	a
AFP pro	Human	AAH52158	22	375		375	20	
encoding novel	DNA 6	AAS77186	23	1066	14.8	434.8	19	
encoding novel	DNA 6	AAS66219	23	798	14.8	434.8	18	
CDNA 3'	Human	AAK93107	22	535	•	511.2	17	ဂ
protein enco	Human	ААН99626	22	1975		541	16	
CDNA	Human	AAK92364	22	838	26.5	775.6	<u>,,,</u>	
	Human	AAK93901	22	853		827.8	14	
polyni	Human	AAI59901	22	929	•	912.2	13	
Human/Sheep consen	Humar	AAZ50881	21	1485	44.5	1305	12	
protei	Human	AAH99626	22	1975		1405.6	11	ი
Human/Sheep consen	Human	AAZ50880	21	æ	48.2	1413	10	

## ALIGNMENTS

AAZ50879 RESULT

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AAZ50879 standard; cDNA; 2930

BP.

AAZ50879;

31-MAY-2000

(first entry)

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22-JUL-1998;
                                                                               WO200005375-A1.
                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                      anti-angiogenic;
                                                                                                                                                                                                     chronic inflammation;
endothelial cell prol:
                                                                                                                                                                                                                         Human GBS toxin receptor; group B beta-haemolytic streptococci; HP59; pathological vascularisation; cancer metastases; angiogenesis; neovascularisation; reperfusion injury; scarring; keloid;
                                                                                                                                                                                                                                                                           Full length human GBS toxin receptor (HP59) cDNA.
                                22-JUL-1999;
                                                       03-FEB-2000.
                                99WO-US16676
        98US-0093843
                                                                                                    /reag= a
/product=
                                                                                                                             Location/Qualifiers 263..1873
                                                                                                                                                                                       tion; rheumatoid arthritis; psoriasis; neural injury;
proliferation; antibacterial; anticancer;
anti-inflammatory; anti-arthritic; anti-psoriatic; s
                                                                                                      "Human GBS toxin receptor protein"
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Matches 2930
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim
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                                              The present sequence is a DNA encoding full length human group B beta-haemolytic Streptococci (GBS) toxin receptor protein, HP59. The present invention relates to a method for preventing or attenuating a pathoangiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used as vaccines.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, administering group B beta-hemolytic Streptococci toxin receptor o
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                                                                                           (specifically cancer, reperfusion injury, scarring during wound he keloids, chronic inflammation (rheumatoid arthritis or psoriasis) neural injury), and to raise specific antibodies used for treating onset disease. Inhibitors of this receptor are useful for treating pathological or hypoxia-induced endothelial cell proliferation and
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Sequence 2602 B₽; 672 ۶, 576 Ç 583 G; 771 Ŧ, 0 other;

Similarity

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1828	1769 attgctgctgctattaatgtttttggtgccattttctttacactattcgccaaaggtgaa	Qy 1
1440	81 gtcattgctaaaagtc	Db 1
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1260	01 gctggcttcattggctgtgattattctttggccgttgctttcctaactatatcaacaaca	Db 1
1588	1529 gctggcttcattggctgtgattattctttggccgttgctttcctaactatatcaacaaca :	Qy
1200	1141 tgtgttcgcagaatttttagccttataggaatgattggacctgcagtattcctggtagct	Db :
1528	69 tgtgttcgcagaatttttagccttataggaatgattggacctgcagtattcctggtagct	Qγ
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1080	121 ttcaatgttcaagagaatgggtttttatcttcattgccttatttaggctcttggttatgt	뫄
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Best Local Similarity
Matches 2607; Conser
                                                                                                                                                                                                                                                                                                The invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence is a full length human cDNA of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    830 Primers useful for synthesizing use in genetic manipulation -
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02-MAY-2000;
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The present sequence is the coding sequence for human Anion and Sugar Transporter (AST) protein. AST has significant homology with several members of the anion-cation symporter (ACS) family of transporters. AST is implicated in Salla disease, and is useful in screening assays for identifying new drugs. Compounds identified via AST screening is useful for preparing a pharmaceutical suitable as an activator or inhibitor of sialic acid transporter protein. The pharmaceutical may be used in sialic.
                                                                                                                      New human transporter gene implicated in Salla disease and lysosomal sialic acid transport, useful in assays for identifying new drugs, or diagnosing sialic acid transport defects related to mutations in the
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                                   The present invention provides the protein and coding sequences sodium dependent phosphate co-transfer protein 35. The sequences used in the treatment of hypophosphaturia, hypercalcaemia, hypophosphataemic rickets and nephritis. The present sequence is hypophosphataemic rickets and nephritis.
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                                                                                                                                                                                                                                                                                                              -haemolytic streptococci) toxin receptor (SP55). This sequence was cloned using a primary culture of sheep lung endothelial cells. Expression vectors comprising this cDNA can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating
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                                                                                                                                                      The present sequence is a DNA encoding sheep group B beta-haemolytic Streptococci (GBS) toxin receptor protein, Sp55. The present invention relates to a method for preventing or attenuating a patho-angiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used
                                                                                                                                                                                                                                                                                                                           Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, administering group B beta-hemolytic Streptococci toxin receptor o
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                                                                                                         The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activity. Drager Syndrome system suppression, Activinyinhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
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9626/c AAH99626 standard; cDNA; 1975

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16-OCT-2001 (first entry)

Human protein

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NO:461.

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13-AUG-2000;
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19-OCT-2000;
                                                                                                                                                                                                                                                           Tang
Wang
Zhao
The invention relates to human nucleic acids (AAI57798-AAI61369) the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides as
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11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                                                                                                                                   clones. 830 cDNA molecules encoding a human protein have been solated and nucleotide sequences of 5'- and 3'-ends of the cDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence was used as the representative sequence from a human clone which was used in homology searches to identify the clone.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
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Wakamatsu
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na T, Nagai
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K, Kojima
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  synthesis; oligo-capping;
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Matches 795; Conserv
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Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
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Otsuki T, Ko
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Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.

Holses 1 to 2930)

Hellerqvist, C.G.

Methods for preventing or attenuating pathoangiogenic conditions busing the 9bs-toxin (cml01) receptor as a vaccine

Patent: Wo 0156598-A 1 09-AuG-2001;

VANDERBILT UNIVERSITY (US)

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/db_xref="G1:15422330"
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E 1 (bases 1 to 2930)

Carter, C.E., Shi, E., Venkov, C., Yakes, M.F., Page, D.L. and Hellequist, C.G.

Identification of a novel membrane protein from mammalian cells that interacts with the anti-pathoangiogenic compound CM101

L unpublished

L Dabes 1 to 2930)

E 2 (bases 1 to 2930)

E 2 (bases 1 to 2930)

E 3 (bases 1 to 2930)

Sis Fu, C., Bardhan, S., Cetateanu, N.D., Lloyd, S.R. and Hellerqvist, C.G.

Direct Submission

Submitted (13-MAR-2000) Biochemistry, Vanderbilt University, Scool of Medicine, 23rdoleierce, Nashville, TN 37232-0146, USA
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FPRAMHAMASNAPPLENSKLLSISYARAQLGYTVSLPLSGICCYXMMTYUFYFRGT
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               06-AUG-2000
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                 mRNA linear PRI 06-AUG-200
HP59 (HP59) mRNA, complete cds.
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ilarity 100.0%; Pred. No. 0;
Conservative 0; Mismatches
             2930 bp
membrane glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                  1. .2930
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1. .2930
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Homo sapiens n
AF244577
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gccagctcggcccgggggcttcgggctgtcgggccgccccgg GCCAGCTCGGCCCGGGGCTCGGGCTGCGGGCCGCG gagtacacctgctcacgtaggcgtcatgaggtctccggt [	ttcttacaa              cctaaggtt 
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1   1   1   1   1   1   1   1   1   1	61 ggctatcg 
	Oy 120 Db 120 Oy 133 Db 133

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Q D	20	ttggacctgcagtattcctggtagctgcttgcttcattggctgtgattattctttggc 156	9
oy O	1561	ogttgotttectaactatateaacaacaetgggaggettttgetettetggatttageat 1620 	a a
Qy		accatctggatattgctccttcgtatgctggtatcctcctgggcatcacaaatacatt 16	α
qa	1621		80
Oy	1681	actattccaggaatggttgggcccgtcattgctaaaagtctgaccctgataaca	4
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QΩ	1741	TTGGAGAATGGCAAACCGTGTTCTATATTGCTGCTGCTATTAATGTTTTGGTGCCA	Ō
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qq	1921	gtaacctcaagtgccttctgtattgtgtaagcattctatgtctttttttaattgta	æ
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QQ	2101	TECCTGCTAGTCGGGCAACATGAAGTAGGACAGTTCTTTTTTTT	ø
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QQ	2161	AGGGAATGAGCTGAACAGACCTCCTGATACCTTTGCTTAATTAA	7
δÿ	2221	ggtactgataaacacctgttgttgtt	8
QQ	2221	TCAGGTACTGATAAACACCTGTTGTTCACTTTCCTCATAAAATTGTCAGCTCT	œ
Qy	2281	acttagacctcaaactttagcatctctgtggagctgccatccactg	4
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Ωy	2401	gggtcagagtgcccagcgtttatcagaggcagcatcc	
qa	2401	TCAGGGTCAGAGTGCCCAGGGTTTATCAGAGGCAGCATCCAAGGCCCAGAGCCAGTGT	
δλ	2461	gactetteggetggtggtgettteetetgaggggetateaatgtgtagataaaageeetgagt 2520	Ö

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                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                   /tissue_type="Colon, adenocarcinoma"
/clone_lib="NIH_MGC_65"
/lab_host="DH108"
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                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                 13;
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                                                                                                                                                                                                                                                                                                                                                                                                             Score 2619.2;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                               89.4%;
99.5%;
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Homo sapiens, solute carrier family 17 (anion/sugar transporter), member 5, clone MGC:8885 IMAGE:3847279, mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford university School of Medicine, Stanford, CA 94305
Web site: http://www.shgc.stanford.edu
Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      be found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clone distribution: MGC clone distribution information can be foun through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov Series: IRAK Plate: 20 Row: i Column: 2 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 6912665.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
Submitted (03-2MN-2002) National Institutes of Health, Mammalian
Gene Collection (MCG), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                     2640
                                                                                                                                     2640
                                                                                                                                                                      2700
                                                                                                                                                                                                                                     2701 tcaggagitcgagaccagcctggccagcatggigaaaccccatctctactaaaaatacaa 2760
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2461 GACTCTTCGGCTGGTGCCTTTCCTCTGAGGGGCTATCAATGTGTATAAAGCCCTGAGT 2520
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                                                                                                                                                                                                                                                                                                                                                                                               2821 GGAGAATCACTTGAACCTGGGAGGTGGAAGTTGCAGTGAACCAAGATCACGCCACTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
I Chases I to 3329)
Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             URL: http://mgc.nci.nih.gov
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/db_xref="LocusID:26503"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NIH-MGC Project URL: http://m
Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATC
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KEYWORDS SOURCE ORGANISM

TITLE JOURNAL

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REFERENCE AUTHORS

LOCUS DEFINITION

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PAT 30-MAY-2001 Craniata, Vertebrata, Euteleostomi, Catarrhini, Hominidae, Homo. 2149 1948 2269 2008 2389 2128 2449 2188 2509 2248 2569 2368 2689 2749 2488 2548 GAATAATAAAATGAAATGTGTGTTTAATTATGAATAATATGTAAGCTAGGACTTCTACTTTA 1828 2668 aagccctgagtaggcaagagcagtgagatccactgctatggtcttgatacatcctcaaac Human anion transporter gene implicated in salla disease linear DNA 2512 bp EP1069184. Eukaryota, Metazoa, Chordata, Mammalia, Eutheria, Primates, 1 (bases 1 to 2512) AX138494 Sequence 2 from Patent E AX138494 AX138494.1 GI:14274389 Homo sapiens human. DEFINITION ACCESSION 1769 2069 2510 2249 2570 ORGANISM 2090 2330 2309 2690 2429 2750 2489 2810 2549 2870 2609 AUTHORS TITLE REFERENCE AX138494 LOCUS VERSION KEYWORDS SOURCE RESULT q g Ω q Op Dp Q Db g g g g δy Óλ δ QΥ Qγ δ δ οy a g ò οy ò Qγ Ω ð

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Location/Qualifiers
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Submitted (03-20N-1999) F.W. Verheijen, Erasmus University, Dept
Clinical Genetics, P.O. Box 1738, 3000 DR Rotterdam, NETHERLANDS
Location/Qualifiers
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Joosse,M., Peltonen,L., Aula,P., Galjaard,H., van der Spek,P.J.
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Nat. Genet. 23 (4), 462-465 (1999)
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Mammalia, Eutheria, Primates,
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Verheijen,F.W., Verbeek,E., Au
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Verheijen, F.W.
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Fu,C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R. and Hellerqvist,C.G. Direct Submission
Submitted (13-MAR-2000) Blochemistry, Vanderbilt University, Scool of Medicine, 23rd@Plerce, Nashville, TN 37232-0146, USA Location/Qualifiers
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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
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Carter,C.E., Shi,B., Venkov,C., Yakes,M.F., Page,D.L. and
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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
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/db_xref="taxon:9939"
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/note="unnamed protein product"
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Hellerqvist, C.G.
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AK025880 1587 bp mRNA linear PRI 29-SEP-2000 Homo sapiens CDNA: FLJ22227 fis, clone HRC01782, highly similar to HSA387747 Homo sapiens mRNA for sialin.
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NEDO, human cDNa, sequencing project
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Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      University of Tokyo (partly supported by Science and Technology
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (29-AUG-2000) to the DDBJ/EMBL/GenBank databases. Sugano, Institute of Medical Science, University of ToKyo, Laboratory of Genome Structure Analysis, Human Genome Center Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-8639, Japan (E-mail:cdnal@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286,
                            ataaagccctgagtaggcaagagcagtgagatccactgctatggtcttgatacatcctca
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Homo sapiens primary human renal epithelial
clone_lib:HRC clone:HRC01782.
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/organism="Homo sapiens"
/organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_type="primary human renal
/clone="HRC01182"
/clone_lib="HRC"
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2 (bases 1 to 1587)
Sugano, S., Suzuki, Y., Ota, T., Obayashi, I
Shibahara, T., Tanaka, T. and Nakamura, Y.
Direct Submission
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1158	2562	2622	2682	2742	1458	1518	2922 1578	RESULT 9 AK026921 LOCUS	ACCESSION VERSION	KEIWOKDS SOURCE ORGANISM	REFERENCE AUTHORS	TITLE JOURNAL REFERENCE	AUTHORS TITLE JOURNAL		COMMENT	t	source	
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mRNA linear PRI 29-SEP-2000 clone COL08932, highly similar to stalin.
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ry of Japan; cDNA full insert
on for Biotechnology; cDNA library
pass sequencing: Departent of
er, Institute of Medical Science,
prorted by Science and Technology
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ence, University of Tokyo,
analysis, Human Genome Center;
Tokyo 108-8639, Japan
Tel:81-3-5449-5286,
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Suzuki,Y., Obayashi,M., Nishi,T.,
a,Y., Isogai,T. and Sugano,S.
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tarrhini; Hominidae; Homo.
                          ayashi,M., Nishi,T., Isogai,T.,
mura,Y.
SATCCACTGCTATGGTCTTGATACAT 1217
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clone_lib:COL clone:COL08932.
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641 bp DNA linear HTG 10-JUL-2001 clone RP3-515P18, *** SEQUENCING IN Pieces.
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Catarrhini; Hominidae; Homo.
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1 (bases 1 to 56641)
Phillimore.B.
Direct Submission
Submitted (09-JUJ-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 15A, UK. E-mail enquiries: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk Clone on Jan 25, 2001 this sequence version replaced gi:11602493.
                                     CTATCAATGTGTAGATAAAGCCCTGAGTAGGCAAGAGCAGTGAGATCCACTGCTATGGTC
                                                                                                                                                                                                                                        aatcccagatactcaggaggctgaggtaggagatcacttgaacctgggaggtggaagtt
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  NOTE: This is a 'working draft' sequence. It currently
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Insert size: 77158; 19.3% error; agarose-fp
Quality coverage: 7.34x in Q20 bases; sum-of-contigs
coverage: 5.47x in Q20 bases; agarose-fp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Assembly program: XGAP4; version 4.5 Sequencing vector: M13, M17815; 118 of reads Sequencing vector: M13, M17815; 118 of reads Chemistry: Dye-terminator ABI; 1% of reads Chemistry: Dye-terminator ABI; 1% of reads Chemistry: Dye-terminator Big Dye; 98% of reads Consensus quality: 55081 bases at least Q40 Consensus quality: 56081 bases at least Q20 Consensus quality: 56256 bases at least Q20
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HTG; HTGS_PHASE1; HTGS_CANCELLED.
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                                                                                                  Length 2006;
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                                                                                                  DB 9;
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/note="cloning vector
1. .2006
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Submitted (17-MAR-2001) Sanger Centre, Hinxton, Cambridgeshire, Submitted (17-MAR-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 ISA, UK. E-mail enquirites: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk on Mar 12, 2001 this sequence version replaced gi:12832031.

During sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission corresponding to the overlapping clone, as we submit sequences with
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Нимаn DNA sequence from clone RP3-397H23 on chromosome 6q12-14.1,
AL121972
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Catarrhini; Hominidae; Homo.
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                                                                                                                                    caageccagagecagtgtegaetetteggetggtgeettteetetgaggggetateaatg
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                                                             gocatccactgtataatttcgcctggcaactggactgaggggagtgtgcccaggcagctg
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Mammalia; Eutheria;
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35017 35116: gap of 100 bp
35117 38963: contig of 3847 bp in length
38964 39063: gap of 100 bp
39064 56641: contig of 17578 bp in length.
Location/Qualifiers
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Pred. No. 3.1e-271;
0; Mismatches 9;
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/note="assembly_fragment:00264
fragment_chain:1"
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/note="assembly_fragment:00607
fragment_chain:1"
31 a 12335 c 12027 g 15895 t 2
                                                                                                                                                                                                                                              /clone="RP3-515P18"
/clone_11b="RPC1-3"
1. . 35016
/note="assembly_fragment:00367
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/organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="6"
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This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the assembly was confirmed by restriction digest. The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: Em:, EMBL; Sw:, GATSPROT: Tr:, TREMBL; WP:, WORMPEP: Information on the WORMPEP
                                                                                                                                                                                                                                                                     http://www.sanger.ac.uk/Projects/C_elegans/wormpep This sequence was generated from part of bacterial clone contigs of human chromosome 6, constructed by the Sanger Centre Chromosome 6 Mapping Group. Further information can be found at
                                                                                                                                                                                                                                                                                                                                                             http://www.sanger.ac.uk/HGP/Chr6
1873-397H23 is from the library RPCI-3 constructed by the group of
Pieter de Jong. For further details see
http://www.chori.org/bacpac/home.htm
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note="Alusg1 repeat: matches 1. .135 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .218 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .118 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        260. 570 Thota-"AluSx repeat: matches 1. .305 of consensus" 674. .707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1105. .1428
/note="AluSx repeat: matches 1. .306 of consensus"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1826. 2123
Anote-"Alux repeat: matches 1. .295 of consensus"
complement(2112. .2118)
Anote-"Single clone region. assembly confirmed by restriction digest data"
Complement(2120. .2127)
Anote-"Single clone region. assembly confirmed by restriction digest data"
complement(2120. .2127)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2795. .2912
/note="FLAM_C repeat: matches 1. .118 of consensus 3028. .3325
/note="Alux repeat: matches 1. .296 of consensus" 3355. .3644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(2161. .2164)
/note="Single clone region. assembly confirmed by restriction digest data"
complement(2168. .2263)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This sequence is the entire insert of clone RP3-397H23
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/note="AluSx repeat: matches 1.
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/note="MER20 repeat: matches
1826. .2123
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restriction digest data"
complement(2149. .2160)
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'note="AluJ/FLAM repeat:
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/organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="6"
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'note="AluSp repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
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// 1073. .10778 // 1004="L2 repeat: matches 2575. .2616 of consensus" 10846. .1098 // 1004="MTR repeat: matches 53. .200 of consensus" 11023. .11140 // 10045. .12079 // 10045. .12079 // 10045. .12079 // 10045. .12079 // 10045. .12079 // 10045. .12079 // 10045. .12079 // 10045. .12070 // 10045. matches 129. .312 of consensus' /note="Alusx repeat: matches 138. 307 of consensus" 14482. 14610 /note="MERSA repeat: matches 46. 167 of consensus" 14614. 114911 2 repeat: matches 2575. .2616 of consensus" 10985 5117. 5253 /note="FLAM\_C repeat: matches 1. .132 of consensus" .131 of consensus" .306 of consensus" .2702 of consensus" //note="Alux" repeat: matches 152. .306 of consensus" 13838. .13947 .118 of consensus" matches 1. .306 of consensus" note="Alusx repeat: matches 1. .293 of consensus" 13058. .13351 /note="AluSg repeat: matches 1. .305 of consensus" 14255. .14437 .301 of consensus" .306 of consensus" .295 of consensus" repeat: matches 1. .301 of consensus" repeat: matches 1. .296 of consensus" .297 of consensus" of consensus" /note="AluSp repeat: matches 1. .296 of consensus" .296 of consensus" .138 of .311 of /note="FLAM.C repeat: matches 1. .118 of 16.57..16439 /note="AluJb repeat: matches 11. .294 of 16.18...16913 οĮ .300 of .298 of .308 of .287 . 299 6097. .6225 /note="FLAM\_A repeat: matches 1. 6296. .6479 /note="AluJb repeat: matches 129. matches 42. /note="AluSx repeat: matches 25. 13948. .14254 /note="AluSq repeat: matches 1.7308. 7307. 8035 9490. .9785 /note="AluSx repeat: matches 1. 10352. .10431 'note="AluSg repeat: matches 1. matches 1. /note="L2 repeat: matches 2616. 10432. 10734 /note="mluxx repeat: matches 1. 10735. 10778 .luSp repeat: matches 1. 15556 /note="Aluxa repeat: matches 5. 15578. 15888 /note="Aluxa repeat: matches 1. 15965. 16082 matches 1. matches 1. matches 1. matches 1. 14934. 15229 /note="AluSp repeat: ma 15266. 15556 4490, 4793 /note="AluJb repeat: 5117, .5253 5501. .5814 /note="Alusg repeat: 6097. .6225 7775. .4074 'note="AluSx repeat: /note="AluJo repeat: 4490. .4793 545. .6830 note="AluJo repeat: /note="AluSc r 13504. .13657

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Pred. No. 3.5e-271;
0; Mismatches 9;
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                                                                                                                                                                                                                                                                                                    24322. .24622
/note="AluSx repeat: matches 1.
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25178. .25302
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Best Local Similarity 99.3%;
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         /note="33
17001. .17
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DNA linear HTG 12-MAY-2000 RP11-598G19 map 6, WORKING DRAFT
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                                      ATAAAAATTGTCAGCTCTCTCTGACACTTAGACCTCAAACTTTAGCATCTCTGTGGAGCT
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Catarrhini; Hominidae;
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Mammalia; Butheria; Primates; Catarrhini; Homin
1 (bases 1 to 14959)
Birren, B., Linton, L., Nusbaum, C. and Lander, E.
Homo sapiens chromosome 6, clone RP11-598G19
Unpublished
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Homo sapiens chromosome 6 clone
SEQUENCE, 31 unordered pieces.
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HTG; HTGS_PHASE1; HTGS_DRAFT.
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                                      56097
                                                                                                                  56037
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KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
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COMMENT

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99135 110324: contig of 11190 bp in length
110325 110424: gap of 1100 bp
110425 119810: contig of 1190 bp in length
119811 119910: gap of 100 bp
119911 130142: contig of 10325 bp in length
130143 130242: gap of 100 bp
130243 149597: contig of 19355 bp in length.
Location/Qualifiers
1...149597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82680 90920: contig of 8241 bp in length 90921 91020: gap of 100 bp 91021 99034: contig of 8014 bp in length 99035 99134: gap of 100 bp
                                                                                                                                                                                 34384: gap of 100 bp
37707: contig of 3323 bp in length
37807: gap of 100 bp
41922: contig of 4115 bp in length
42022: gap of 100 bp
45878: contig of 3856 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59631: gap of 100 bp
65537: contig of 5906 bp in length
65637: gap of 100 bp
71486: contig of 5849 bp in length
                                                                                                                                                                                                                                                                                                                                                                            78: gap of 100 bp
49890: contig of 3912 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54141: gap of 100 bp 559531: contig of 5390 bp in length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig of 5785 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="RPCI-11 Human Male BAC"
[. .1018
                                                                                                                                                                                                                                                                                                                                                                                                                                        p of 100 bp contig of 4051 bp
                                                  28015 28114: gap of 100 bp 28115 31378: contig of 3264 bp
                                                                                                                     78: gap of 100 bp 34284: contig of 2806 bp
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6548. .8884
/note="assembly_fragment"
8985. .10630
/note="assembly_fragment"
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/note="assembly_fragment"
2304. .3814
/note="assembly_fragment"
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/note="assembly_fragment"
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/note="assembly_fragment"
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note="assembly_fragment"
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25366. .28014
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/note="assembly_fragment
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/db_xref="taxon:9606"
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34385 37707: conti
37708 37807: gap of
37808 41922: conti
41923 42022: gap of
42023 45878: conti
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76795 82579; cont
82580 82679; gap of
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Grand-Plerre, N., Grant, G., Hagos, B., Heaford, A., Horton, L.,
Howland, J.C., Illay I., Johnson, R., Jones, C., Kann, L.,
Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J.,
Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N.,
McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheters, R.,
Meldrim, J., Maneus, L., Mihova, T., Miranda, C., Morrow, J.,
O'Neil, D., Olivar, T.M., Oliver, J., Peterson, K., Pierre, N.,
Pisani, C., Pollara, V., Schauer, S., Severs, P., Spencer, B., Rody, P., Rohman, D.,
Roy, A., Santos, R., Schauer, S., Severs, P., Spencer, B., Rothman, D.,
Stange-Thomann, N., Stolawer, S., Severs, P., Spencer, B.,
Stange-Thomann, N., Stolawovic, N., Subramanian, A., Talamas, J.,
Voung, G., Zahnoun, J., Zimmer, A. and Zody, M.
Direct Submission
Submitted (105-ARP-2000 Whitehead Institute/MIT Center for Genome
Research, 320 charles Street, Cambridge, MA 0214, USA
On May 12, 200 this sequence version replaced gl:7417823.
All repeats were identified using RepeatMasker: html
Center code: WIBR
Meb site: http://www-seq.wi.mit.edu
Contact: sequence submissions genome. wi.mit.edu
Consensus quality: 11812 bases at least 030
Consensus quality: 11812 bases at least 020
Consensus quality: 11812 bases at least 020
Consensus quality: 100 bases; suparose-fp
Insert size: 166000; agarose-fp
Insert size: 166000; agarose-fp
Insert size: 166000; agarose-fp
Out
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOTE: This is a 'working draft' sequence. It currently consists of 31 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28 0447: CUILLY COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD COLORD 
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contig of 1085 bp in length
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f 2020 bp in length
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18722: contig of 2630 bp in length
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25265: contig of 3470 bp in length
55: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig of 2690 bp in length
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3915 4327; cont
4328 4427; gap of
4428 6447; cont
6448 6547; gap of
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2304 3814 cor
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18823 21695
21696 21795: 9
21796 25265
25266 25365: 9
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16093 187
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13303 159
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JOURNAL
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DNA linear HTG 07-JUL-2000
RP11-206H23, WORKING DRAFT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing Center, Washington 4444 Forest Park Parkway, St.
                                                               76267 AAATGCGAAGGGGCCGGGCACGGTGGCTCATGCCTGTAATCCCAGCACTTTGGGGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tactcaggaggctgaggtaggagatcacttgaacctgggaggtggaagttgcagtgaac
                                                                                                      ccaagcactccctccctggcttcagggtcagagtgcccagcgtttatcagaggcagcatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caagcccagagccagtgtcgactcttcggctggtgcctttcctctgaggggctatcaatg
                                                                                                                                                                                                                                                                                                                aaatgcgaagcggccgggcacggtggctcatgcctgtaatcccagcactttggggggtg
 ataaaaaattgtcagctctctctgacacttagacctcaaactttagcatctctgtggagct
                                                    gccatccactgtataatttcgcctggcaactggactgaggggagtgtgcccaggcagctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Eutele
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (10-MAR-2000) Genome Sequencing Center, Washingt
Oniversity School of Medicine, 4444 Forest Park Parkway, 9
MO 63108, USA
On Apr 28, 2000 this sequence version replaced gi:7582731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The sequence of Homo sapiens clone Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACU25535
Homo sapiens chromosome 6 clone
SEQUENCE, 25 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa; Chordata;
Mammalia; Eutheria; Primates;
1 (bases 1 to 157749)
Waterston, R.H.
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AC025535.4 GI:7658462
HTG: HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 157749)
Waterston, R.H.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ||||||||||
|16567 AAAAAGAA 76574
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arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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                                                                                                                                                                                  Sequencing vector: Missing 10% of reads
Chemistry: Dye-primer ET; 100% of reads
Chemistry: Dye-primer ET; 100% of reads
Chemistry: Dye-traminator Big Dye; 0% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 14682 bases at least Q40
Consensus quality: 146862 bases at least Q20
Consensus quality: 146842 bases at least Q20
Insert size: 168000; agarose-fp
Insert size: 15349; sum-of-contigs
Quality coverage: 3.52 in Q20 bases; sum-of-contigs
                    Center: Washington University Genome Sequencing Center
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                                                                                                                                                                                 9; DB 2; Length 157749;
9e-271;
                                                                                                                                                                                                          ;
0
 115484: gap of unknown length
132131: contig of 16647 bp in length
13231: gap of unknown length
157749: contig of 25518 bp in length.
                                                                                                                               2407 others
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                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                 40.7%; Score 1192; 99.2%; Pred. No. 9e
                                                                1. .157749
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34263 c 34620 g
                                                   Location/Qualifiers
                                                                                                      /chromosome="6"
                                                                                                                                                                                                          Matches 1198; Conservative
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115385
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IMPORTANT: This sequence is not the entire insert of clone RP11-553A21 It may be shorter because we sequence overlapping sections only once, except for a 100 base overlap. The true right end of clone RP11-553A21 is at 163577 in this sequence. The true left end of clone RP11-52G3 is at 88067 in this sequence. The true right end of clone RP3-397H23 is at 2000 in this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2588. .2706
//note="LlMC/D repeat: matches 5389. .5514 of consensus" 3686. .4489
//note="CpG island"
//evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6118. .6474
/note="ilmc3 repeat: matches 7398. .7739 of consensus"
6475. .6771
/note="AluY repeat: matches 1. .290 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1691. .1759
/note="LlMC5 repeat: matches 7536. .7604 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2025. .2248
/note="L1MC5 repeat: matches 7604. .7887 of consensus"
2588. .2706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  744. 919
/note="AluJb repeat: matches 119. .305 of consensus"
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/note="MER33 repeat: matches 129. .323 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1385. 1690
/note="AluSx repeat: matches 1. 306 of consensus"
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Anote-"AluJo repeat: matches 1. .286 of consensus"
7807. s1168
/note-"AluSq repeat: matches 1. .287 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1976. 9292
/note="AluSx repeat: matches 1. 311 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9698. .9994
/note="AluSq repeat: matches 1. .295 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     //note="21 copies 2 mer cc 78% conserved"
1691. .4996
//note="AluJo repeat: matches 3. .306 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="33 copies 2 mer tc 89% conserved"
3431. .8729
note="AluSq repeat: matches 1. .302 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                            285. .433
/note="AluJb repeat: matches 1. .119 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1760. .2024
/note="AluY repeat: matches 35. .287 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                               434. .743
/hote="Alux repeat: matches 1. .311 of consensus"
744. .919
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/note="L1MC3 repeat: matches 6740. .7398 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10005. .10048
/note="22 copies 2 mer tt 79% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5628. .5977
/note="MLT2FB repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5978. .6030
/note="MER5A repeat: matches 44.
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/note="MIR repeat: matches 106.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            matches 1.
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http://www.chori.org/bacpac/home.htm
                                                                                                                                                                                                                                                                  1. .1633//
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                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="RPCI-11.2"
                                                                                                                                                                                                                                                                                                             /db_xref="taxon:9606"
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/note="MER33 repeat:
                                                                                                                                                                                                                                                                                                                                                           /clone="RP11-553A21"
                                                                                                                                                                                                                               Location/Qualifiers
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/note="33 cop
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/note="21 cc
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/note="L2 r
                        VECTOR: pBACe3.6
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On Aug 1, 2001 this sequence version replaced gi:1502117.
During sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission corresponding to the overlapping clone, as we submit sequences with only a small overlap as described above.

This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                assembly was confirmed by restriction digest. The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: Em:, EMBL; Sw.; SWISSPROT; Tr., TREMBL; WP:, WORMPEP; Information on the WORMPEP database can be found at http://www.sanger.ac.uk/Projects/C_elegans/wormpep This sequence thto://www.sanger.ac.uk/Projects/C_elegans/wormpep This sequence chromosome 6, constructed by the Sanger Centre Chromosome 6 Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL590428 11-JUL-2001 Human DNA sequence from clone RP11-553A21 on chromosome 6, complete
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                         92154 CAAGATCACGCCACTGCACCTCCAGCCGTGGGCGAGGACTCCAACTCCAAAAAAA 92095
                                                                                                                                                                                                                                                                                92334 AGGTGGCCGAATCATGAGATCAGGAGTTCGAGACCAGCCTGGCCAGCATGGTGAAACCCC 92275
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caagatcacgccactgcactccagcctgggggggtggaggggggccaactcaaaaaaa 2921
                          aggtgggcgaatcatgagatcaggagttcgagaccagcctggccagcatggtgaaacccc
                                                                                                                                                                                                                                                                                                                                                                                                                                       tactcaggaggctgaggtaggagaatcacttgaacctgggaggtggaagttgcagtgaac
                                                                                                                              aaatgcgaagcgggcacggtggctcatgcctgtaatcccagcactttggggggctg
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AL590428.7 GI:15072593
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KEYWORDS
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.2708 of

.97 of consensus"

.403 of

.129 of consensus" .226 of consensus" us-09-776-865-1.rge

7

repeat_region 10050	10999	repeat_region 25
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	Julyo11931 /note="Systa repeat: matches 5191386 of consensus" 	repeat_region 269
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1 \	712Johr . 12694   Mote="AluSx repeat: matches 3287 of consensus"   1908   13090	repeat_region 278
repeat_region 1292	1232013220 horde="Misp repeat: matches 2295 of consensus" 1304 13417	repeat_region 279
-	/note="FLAM_C repeat: matches 1123 of consensus" 13451. 13636	Query Match Rest Local Similarity
	note="Alusq repeat: matches 1189 of consensus" 3637. 13697	hes 47
		Oy 1 gttcggtcgaagcc
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•	/note="L2 repeat: matches 26362734 of consensus" 17252. 17283	Db 4360 GCTCACTTTGCGC
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repeat_region 1000	Jobol. 12334 /note="LiMalO repeat: matches 50266320 of consensus"	Qy 278
	1995	Db 4240 CGGGACCGCGGG
1 \ (	/note="Limac repeat: matches 922997 of consensus"	Qy 298 ccagccagctcgg
	2011920442 hotte="MiddyFRAM repeat: matches 179305 of consensus" 200331377	Db 4180 CCAGCCAGCTCGGC
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	2110z1//J http="%lung repeat: matches 1296 of consensus" 21700 - 21016	Db 4120 GGCGAGTACACCT
repeat_region 21/30	21/75. :1310 hote="FLAM_C repeat: matches 1. :118 of consensus" 2511. :118 of consensus"	Qy 418 cgatggcgaggage
, , ,		Db 4060 CGATGGCGAGGAG
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	2002: .2022. 2005="AluSq/x repeat: matches 12112 of consensus" 21606 21606	AC034271/c LOCUS AC034271
		NOILI
	/note="AluSg repeat: matches 1304 of consensus" 2399724222	_
	/note="Alusx repeat: matches 142, .309 of consensus" 2014 21416	KENTON HOGS HIGS PI
-	21623: .11113 hote="AluSg/x repeat: matches 127300 of consensus" 2427 24734	NISM
-	Anote-"Alusx repeat: matches 1300 of consensus"	
	/note="MLTIAl repeat: matches 1363 of consensus"	AUTHORS Birren, B., 1

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149597 bp DNA linear HTG 12-MAY-2000 ns chromosome 6 clone RP11-598G19 map 6, WORKING DRAFT 31 unordered pieces.
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/51/9. .25404
/51/9. .25404
/51/9. .25519
/544. .25519
/5614. .25519
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/6614. .25519
/6614. .25730
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Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 to 149597)
                                                                                                                                                                                                                                                                                                         agcacggaccgcacgcctcttctaccgggcgcccacgggccgaagc 477
                                                                                                                                                                                                                                                    277
                                                                                                                                                                                          13.7%; Score 400; DB 9; Length 163577;
87.5%; Pred. No. 1.2e-83;
Live 0; Mismatches 5; Indels 63; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acacctaagatggcggcggggggcg-----------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Birren, B., Linton, L., Nusbaum, C. and Lander, E.
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PHASE1; HTGS_DRAFT.
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rvative
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110325 110424: gap of 100 bp 110425 119810: contig of 9386 bp in length 119811 119910: gap of 100 bp 119911 130142: contig of 10232 bp in length
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110324: contig of 11190 bp in length
                                                                                                                                                                                                                                                           31378: contig of 3264 bp in length 31478: gap of 100 hp
                               p of 100 bp
contig of 2690 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42022: gap of 100 bp
45878: contig of 3856 bp in length
45978: gap of 100 bp
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54041: contig of 4051 bp in length
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59531: contig of 5390 bp in length
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82579: contig of 5785 bp in length
       13202: contig of 2472 bp in length
                                                                           p of 100 bp contig of 2630 bp in length
                                                                                                                            22: gap of 100 bp 21695: contig of 2873 bp in length
                                                                                                                                                                           p of 100 bp contig of 3470 bp in length
                                                                                                                                                                                                                            65: gap of 100 bp
28014: contig of 2649 bp in length
                                                                                                                                                                                                                                                                                                                         78: gap of 100 bp 34284: contig of 2806 bp in length
                                                                                                                                                                                                                                                                                                                                                                          84: gap of 100 bp
37707: contig of 3323 bp in length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              178: gap of 100 bp
49890: contig of 3912 bp in length
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/note="assembly_fragment"
2304. .3814
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/note="assembly_fragment"
8985. .10630
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10731. .13202
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/note="assembly_fragment"
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/note="assembly_fragment"
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/note="assembly_fragment
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/db_xref="taxon:9606"
/chromosome="6"
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41922: cont
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99034: cont
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18722: con
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15992: c
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                                                              Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barna, N., Bastien, V., Beda, F., Boukhagiler, B. Brown, A., Burkett, G., Edgagaler, Roughaler, Brown, A., Burkett, G., Campopiano, A., Castle, A., Choepel, Y., Colaggelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J. S., Domlon, M., Doyle, M., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S., Glone, R., Ferreira, P., Fitzhugh, W., Gage, D., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Hewland, J. G., Lilev, I., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheterrs, R., Meldrim, J., Meneus, L., Mihova, T., Mitzanda, C., Mlenga, V., Morrow, J., Willen, M., Schauer, S., Severy, P., Spencer, B., Pisani, C., Pollara, V., Raymond, C., Riley, R., Pierre, N., Pisani, C., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tarfay, R., Voldy, G., Zainoun, J., Zimmer, A. and Zody, M., Wyman, D., Ye, W.J., Voldy, G., Zainoun, J., Zimmer, A. and Zody, M., Wyman, D., Ye, W.J., Voldy, G., Lander, R., and Zody, M., Wyman, D., Ye, W.J., Voldy, G., Kalley, R., Wyman, D., Voldy, G., Zainoun, J., Zimmer, A. and Zody, M., Xi, Wyman, D., Ye, W.J., Voldy, G., Walley, R., Santoe, S., Santo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (05-APR-2000) Whitehead Institute/MIT Center for Genome Stabmitted (05-APR-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA
On May 12, 2000 this sequence version replaced gi:7417823.
All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
Littp://fip.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center: Whitehead Institute/ MIT Center for Genome Research
Center code: WIBR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NOTE: This is a 'working draft' sequence. It currently consists of 31 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality coverage: 3.6 in Q20 bases; agarose-fp
Quality coverage: 4.1 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chemistry: Dye-terminator Big bye; 100% of reads Assembly program: Phrap; version 0.960731 Consensus quality: 134701 bases at least Q40 Consensus quality: 141812 bases at least Q20
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4: gap of 100 bp

4: gap of 100 bp

10630: contig of 1646 bp in length

30: gap of 100 bp
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3814: contig of 1511 bp in length
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100 bp
f 2020 bp in length
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  sapiens chromosome 6, clone RP11-598G19
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Insert size: 146597; sum-of-contigs
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4328 4427; gap of 10
4428 6447; contig of
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TITLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 13.5%; Score 396.8; DB 2; Length Best Local Similarity 87.1%; Pred. No. 6.9e-83; Matches 474; Conservative 0; Mismatches 7; Indels
13303. .15992
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Human polypeptide Human/Sheep consen Human sodium depen

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Result Š polypeptide, polypeptide

Human Human

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/note= _Predicted phosphorylation site"
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/note= "Predicted phosphorylation site"
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/note= "Predicted phosphorylation site"
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/notc= "Predicted myristylation site"
386..391
/notc= "Predicted myristylation site"
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142..147
/note= "Predicted myrint"
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/note= "Predicted myristylation site"
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/note= "Predicted myristylation site"
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/note= "Asn is N-glycosylated"
357..360
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/note= "Asn is N-glycosylated"
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390..407
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The present sequence is sheep GBS (group B beta-haemolytic streptococi) toxin receptor (SP55). Sheep GBS toxin receptor is an integral protein with seven transmembrane domains. Expression vectors comprising the coding region can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating conditions associated with pathological angiogenesis or neovascularisation (specifically cancer, reperfusion injury, scarring during wound healing, keloids, chronic inflammation (rheumatoid arthodies used for treating early onset disease. Inhibitors of this receptor are useful for treating pathological or hypoxia-induced cancer conditional cell proliferation and migration.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New polynucleotide encoding mammalian receptor for streptococcus toxin, useful for diagnosis and treatment of, e.g. pneumonia in neonates -
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/note= "Predicted phosphorylation site"
/note= "Predicted phosphorylation site"
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/note= "Predicted phosphorylation site"
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/label= p55a
/note= "Immunogenic peptide"
71. 84
/label= p57a
/note= "Immunogenic peptide"
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/label= p56a
/note= "Immunogenic peptide"
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Best Local Similarity 100.
Matches 495; Conservative
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N-PSDB; AAZ50876.
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                                                                                                                                                                                                                                                                                               Sheep group B beta-haemolytic Streptococci toxin receptor (SP55) protein.
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                                                  AMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIW
                                                         FILWICLVSDTPETHKTITPYEKEYILSSLKNQLSSQKSVPWIPMLKSLPLWAIVVAHFS
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/label= p55a_immunogenic_peptide
/note= "Fragment of extracellular domain
GBS toxin receptor"
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/note= "Fragment of intracellular domain
GBS toxin receptor"
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71..84
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The present sequence is group B beta-haemolytic Streptococci (GBS) toxin receptor protein, SP55 from sheep. The present invention relates to a method for preventing or attenuating a patho-angiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used as vaccines.
                                                                                                                                                                                                                          Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, by administering group B beta-hemolytic Streptococci toxin receptor or its
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100.0%; Pred. No. 5e-276;
ive 0; Mismatches 0;
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Best Local Similarity 100.
Matches 495; Conservative
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AAY45087;

AAY45087

Key Region

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anion and sugar transporter; anion-cation symporter;
sialic acid transporter.
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                                                                                                                                                                                                            Human GBS toxin receptor; group B beta-haemolytic streptococci; HP55; pathological vascularisation; cancer metastases; angiogenesis; neovascularisation; reperfusion injury; scarring; Keloid; chronic inflammation; rheumatiod arthritis; psoriasis; neural injury; endothelial cell proliferation; antibacterial; anticancer; anti-angiogenic; anti-inflammatory; anti-arthritic; anti-psoriatic.
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86.3%; Pred. No. 1.2e-244;
iive 39; Mismatches 29;
                                                                                                                                                                     Partial human GBS toxin receptor (HP55).
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                                                    AAY45087 standard; Protein; 495 AA.
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Best Local Similarity 86.3
Matches 427; Conservative
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New human transporter gene implicated in Salla disease and lysosomal sialic acid transport, useful in assays for identifying new drugs, or diagnosing sialic acid transport defects related to mutations in the
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/label= CAMP_phospho_site
/note= "Putative phosphorylation site"
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/note= "Putative phosphorylation site"
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/note= "Putative phosphorylation site"
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/note= "Putative myristylation site"
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/note= "Putative myristylation site"
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/note= "Putative phosphorylation
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Le= "Putative amidation site"
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/hote= "Putative myristylation
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/note= "Asn is N-glycosylated"
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The present sequence is human Anion and Sugar Transporter (AST) protein sequence. AST has significant homology with several members of the anion-cation symporter (ACS) family of transporters. AST is implicated in Salla disease, and is useful in screening assays for identifying new pharmaceutical suitable as an activator or inhibitor of a sialic acid transporter protein. The pharmaceutical may be used in sialic acid associated diseases and CNS/immune related disorders.
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86.3%; Pred. No. 1.2e-244;
iive 39; Mismatches 29;
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481 evgnwalndhhghrh 495
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/note= "Putative phosphorylation site"
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86.3%; Pred. No. 1.4e-244;
ive 39; Mismatches 29;
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Human; group B beta-haemolytic Streptococci toxin receptor; GBS; HPS9; cytostatic; vulnerary; antiatherosclerotic; osteopathic; vasotropic; prevention; attenuation; pathoanglogenic condition; cancer; scar; wound healing; gliosis; nerve injury; chronic wound; reperfusion injury; keloid; rheumatoid arthritis; atherosclerosis; osteoarthritis; psoriasis;
                                                                                                                                                                                                                                                                              B beta-haemolytic Streptococci toxin receptor (HP59) protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence is full length group B beta-haemolytic Streptococci (GBS) toxin receptor protein, HPS9 from human. The present invention relates to a method for preventing or attenuating a patho-angiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, kebolds, reperfusion injury, rheumatoid arthritis, atheroscalerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, by administering group B beta-hemolytic Streptococci toxin receptor or its
 480
                  YAGILLGITNTFATIPGMIGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49..76
Tabel= Hab4_immunogenic_peptide
112..125
/label= Hab2_immunogenic_peptide
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/label= Hab3_immunogenic_peptide
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/label= Habl_immunogenic_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                               AAE06518 standard; Protein; 536 AA.
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evqnwalndhhghrh 536
                                                                 EVONWAISDHOGHRN 495
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WPI; 2001-442253/47.
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                                                                Liu C, #
Wang Z, V
Zhou P,
                                                                                                                                                                                                                                                                                                            AA;
                                                (HYSE-) HYSEQ INC
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Note: The sequen
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       03-AUG-2000;
14-SEP-2000;
19-OCT-2000;
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                                                              Tang YT,
Wang J, W
Zhao QA,
                                                                                                                                                                                                                                                                                                            Sequence
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                                                               1 MKSPVSDLAPSDGEEGSDRTPLLQRAPRAEPAPVCCSARYNLAFLSFFGFFVLYSLRVNL
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                                               ;
                               Length 536;
                                               Indels
                                               29;
                              Score 2329; DB 22;
Pred. No. 1.4e-244;
                                              39; Mismatches
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2000US-0552317.
2000US-0598042.
                               89.0%;
86.3%;
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                                              Matches 427; Conservative
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522 evgnwalndhhghrh 536
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                               Query Match
       Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, ettivinhibin activity, chemoteactic/chemokinetic activity, amemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Note: The sequence data for this patent did not form part of the printed specification.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        invention relates to human nucleic acids (AAI57798-AAI61369) and
                                                                                                                                                                                                               Wang
                                                                                                                                                                                                                                                                                                                                                                                            useful for treating disorders
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Zhang J;
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Yang Y,
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                                                                                                                                                                                                          Chen R, Ma Y,
Xu C, Xue AJ,
R, Drmanac RT;
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                                                                                                                                                                                                                                                                                                                                                                                         ucleic acids and polypeptides, us central nervous system injuries
                                                                                                                                                                                                          Asundi V, Che
Wehrman T, Xu
Goodrich R,
2000US-0620312.
2000US-0653450.
2000US-0662191.
2000US-0693036.
2000US-0727344.
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Mismatches 159;

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SVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYI 120
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                                      1 MKSPVSDLAPSDGEEGSDRTPLLQRAPRAEPAPVCCSARYNLAFLSFFGFFULYSLRVNL 60
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     Conservative
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   Matches 335;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is the human/sheep consensus GBS (group B beta the coding region can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating conditions associated with pathological angiogenesis or neovascularisation (specifically cancer, repertusion injury, scarring during wound healing, keloids, chronic inflammation (theumatoid arthritis or psoriasis) or neural injury), and to raise specific antibodies used for treating early onset disease. Inhibitors of this receptor are useful for treating pathological or hypoxia-induced endothelial cell proliferation and
                                                                                                                                                                                                                                                                                                                                                                     cancer metastases; anglogenesis; neovascularisation; reperfusion injury; scarring; kelodi; ohronic inflammation; rheumatoid arthritis; psoriasis; neural injury; endothelial cell proliferation; antibacterial; anticancer; anti-anglogenic; anti-inflammatory; anti-arthritic;
                    480
                                                                                                                                                                                                                                                                                                                               Human/Sheep consensus GBS toxin receptor; GBS; group B beta haemolytic streptococci; pathological vascularisation;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New polynucleotide encoding mammalian receptor for streptococcus tuseful for diagnosis and treatment of, e.g. pneumonia in neonates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "All the X's in the sequence correspond non-consensus sites"
                                                                                                                                                                                                                                                                                             Human/Sheep consensus GBS toxin receptor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 98-100; 109pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                    Protein; 495 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0093843.
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evgnwalndhhghrh 495
                                                     EVQNWAISDHQGHRN 495
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fu C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-205377/18
                                                                                                                                                                                  AAY45090 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                          anti-psoriatic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
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                                                                                                                                                                                                                                                       31-MAY-2000
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                                                                                                                                                                                                                     AAY45090;
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Protein
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AA.

420 480

240 240 300 300 360 360 420

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and its coding sequence
                                                                                                                                                                                                                                     Human Na-dependent phosphate cotransporter 35
                                                                                                                                                                                                                                                                                                     Claim 1; Page 21(Disclosure); 28pp; Chinese.
(SHEN-) SHENGYUAN GENE DEV CO LTD SHANGHAI.
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Score 1702; DB 21; Length 495; Pred. No. 2.7e-176;

65.0%;

Query Match Best Local Similarity

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26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                              leukaemia
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        8;
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         Claim
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sodium dependent phosphate co-transfer protein and coding sequences of hur sodium dependent phosphate co-transfer protein 35. The sequences can I used in the treatment of hypophosphaturia, hypercalcaemia, hypophosphatuemic rickets and nephritis. The present sequence is the protein of the invention.
                                                                                                                                     Primers useful for synthesizing full length cDNA clones and their in genetic manipulation -  \\
                                                                                                         182 MHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIWF 241
                                                                                                                                                                      361
                                                                                                                                                                                                   WVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSY 421
                                                                                                                                                                                                                                 AGILLGITNTFATIPGMIGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKGE 481
                                                                                           Gaps
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                                                                                                                                                                     NWTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTL
                                                                                                                                                                                                           Kawai Y;
T, Koga
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                                                                            Length 314;
                                                                                           Indels
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S, Otsuki
                                                                                                                                                                                                                                                                                                                                                                                 Human; full length cDNA; cDNA synthesis; oligo-capping
                                                                           59.0%; Score 1544; DB 22;
89.2%; Pred. No. 2.3e-159;
11ve 24; Mismatches 10;
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K, Kojima
                                                                                                                                                                                                                                                                                                                      AA.
                                                                                                                                                                                                                                                                                                                                                                   polypeptide, SEQ ID NO: 4069
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a T, Nagai
                                                                                                                                                                                                                                                                                                                    AAM93914 standard; Protein; 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                           99JP-0194486.
2000JP-0118774.
2000JP-0183765.
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                                                                                           Conservative
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301 vqnwalndhhghrh 314
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nishikawa T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-524255/58.
N-PSDB; AAK94876.
                                                                                  Local Similarity
nes 280; Conserv
                                                     314 AA;
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Best Local Si
Matches 280;
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clones. 830 contained by the contained and an arrotation and clones. Since the contained sequences of 5'- and 3'-ends of the contained and nucleotide sequences of 5'- and 3'-ends of the contained and nucleotide sequences of 5'- and 3'-ends of the contained and nucleotide sequences of 5'- and 3'-ends of the contained by contained by contained by contained by contained by contained by contained by contained by child length clones were obtained by construction of full length method. The primers enable the production of the full length contained by without any special methods. The present sequence is a polypeptide moroded by a full length human contained by a full length human contained and the present did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MKSPVSDLAPSDGEEGSDRTPLLQRAPRAEPAPVCCSARYNLAFLSFFGFFVLYSLRVNL 60
                                                            for synthesising full length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYP
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ID NO 4069; 1380pp + sequence listing; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47.1%; Score 1232; DB 22;
81.9%; Pred. No. 1.9e-125;
ive 22; Mismatches 28;
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                                                            primers
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25-APR-2000; 2000US-0552317.
09-JUL-2000; 2000US-0598042.
19-JUL-2000; 2000US-0620312.
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Best Local Similarity 81.9
Matches 227; Conservative
                                                            The invention relates to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200153312-A1
SEQ
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SAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYS 390
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Matches
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                                                                                                                                                                                                          The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM36642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous system, such as paripheral nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the Activitation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                 Note: The sequence data for this patent did not form part of the printed specification.
                                                                             Wang D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 ITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYP 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYI 120
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                                                                                                                                                        Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AMHAMMSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIW
                                                                                         Zhang J;
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                                                                            Qian XB,
Yang Y,
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                                                                                                                                                                                                                                                                                                                                                                                                                                   46.5%; Score 1217; DB 22;
83.0%; Pred. No. 9.7e-124;
ive 21; Mismatches 25;
                                                                            Asundi V, Chen R, Ma Y,
Wehrman T, Xu C, Xue AJ,
Goodrich R, Drmanac RT;
                                                                                                                                                                                      Example 2; SEQ ID NO 5676; 10078pp; English.
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2000US-0653450.
2000US-0662191.
2000US-0693036.
2000US-0727344.
                                                                           Liu C, Asundi V,
Wang Z, Wehrman T,
Zhou P, Goodrich
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 46.5
Best Local Similarity 83.0
Matches 224; Conservative
                                                                                                                       WPI; 2001-442253/47.
                                                                                                                                                                                                                                                                                                                                                                                                     A)
                                                      (HYSE-) HYSEQ INC.
                                                                                                                                  N-PSDB; AAI59901
                                                                                                                                                                                                                                                                                                                                                          C.N.S disorders
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          14-SEP-2000;
19-OCT-2000;
                                29-NOV-2000;
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                                                                           Tang YT,
                                                                                                   Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
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Drosophila; developmental biology; cell signalling; insecticide;
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39.5%; Pred. No. 9e-99;
iive 89; Mismatches 181;
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nes 204; Conservative
                                                                                   Drosophila melanogaster
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New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell interactions \dot{}
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                                              LGECVTYPAMHAMWSSWAPPLERSKILSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYF
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N-PSDB; ABL09976.
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11-JUL-2000;
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390 navpyltswfvgiacsaladwmlarryisllnsyklwntvasvvpslgligiiyvgcdwv 449
                                            54 YSLRVNLSVALVDMVDSNTT-AKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWIL 112
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                             391 LAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGP-IIARSLTP
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Pred. No. 3.5e-98;
3; Mismatches 164;
                                                                                                     |: :| || :|| :|: || 510 retltqwhlvfwlaaglniagnfiylifasaeeqsws 546
                                                                                    450 ENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
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37.7%; Scc
Best Local Similarity 39.1%; Pre
Matches 195; Conservative 103;
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                                       from WIPO
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                                                                                                                                                                     YSLRVNLSVALVDMVDSNTT-AKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWIL 112
                                                                                                                                                                                                          113 GSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEG 172
                                                                                                                                                                                                                                               LGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYF 232
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                 (ABB57737-ABB72072).
The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                         fgtigviwyitwlvfvkagpeldrfcskeecdyiqktigyvgskhvkhpwraiftsmpfy
                                                                                                                                                                                       yslrvnlsvaivamtenrtvfdadgnvsyg------gdfpwdskgkglil
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                                                                                                              37;
 expressed
                                                                                             Length
                                                                                                               164; Indels
genomic DNA sequences (ABL16176-ABL30511), e. (ABL01840-ABL16175) and the encoded proteins
                                                                                           DB 22;
                                                                                           Score 985.5; DB 2 Pred. No. 3.5e-98;
                                                                                                             Conservative 103; Mismatches
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39.18;
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Matches 195; Conser
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Best Local 9
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the sequence listing
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        146 TAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAG
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R, Wang
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F, Chen 1
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41.2%; Pred. No. 6.3e-95;
live 85; Mismatches 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Asundi V, Zhou
ang J, Ren F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drmanac RT, Asundi V, Wang J, Zhang J, Ren Wejhrman T, Goodrich R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 20; Page 4340-4341; 6221pp; English.
                                              2000US-0560875.
2000US-0598075.
2000US-0620325.
                                                                                                                                                                          2000US-0654936.
2000US-0663561.
2000US-0693325.
2000US-0728422.
2000US-0496914
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Best Local Similarity 41.2
Matches 192; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-476283/51.
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Wang D,
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                                                                                                                                                                                                                                                                                                                                                                                                  (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; AAK52406
                                              27-APR-2000;
20-JUN-2000;
19-JUL-2000;
                                                                                                                                                                          01-SEP-2000;
15-SEP-2000;
20-OCT-2000;
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    03-FEB-2000;
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Search completed: July 15, 2002, 08:24:02 Job time: 107 sec



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July 15, 2002, 08:22:58 ; Search time 32.66 Seconds (without alignments) 1456.345 Million cell updates/sec
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2617
1 MKSPVSDLAPSDGEEGSDRT......LFAKGEVQNWAISDHQGHRN 495
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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
                                                                      OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
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Perfect score:
Sequence:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	. ~	hypothetical prote	brain specific Na+	probable sodium-de	protein 2K512.6 [i	sodium/phosphate t	sodium-phosphate t	hypothetical prote	sodium phosphate t	Na+-dependent phos	hypothetical prote	hypothetical prote	9	hypothetical prote				hypothetical prote	o.	hypothetical prote	hypothetical prote			hypothetical prote		_	_	_	
SUMMARIES	ID	G88553	S28286	159302	T43650	H88548	A56410	S69915	T23589	A48916	I39473	T24633	н84698	B89135	T01534	T45634	S40767	D84800	T25419	S44742	T29418	T29248	T24729	T15201	T29968	T32496	T25357	T23590	A90055	T31717
	DB				7																									
	Length	493	472	260	563	576	465	465	573	467	465	544	512	501	413	537	466	561	592	268	530	380	516	499	206	543	493	445	425	473
dP	Query	37.0	36.3	35.4	31.3	31.3		30.7	30.3	30.2	29.6	29.3	28.4	22.4	21.5		20.7	19.1		æ	æ	17.2	7	9	16.0	16.0	5	15.0	4	4
	Score	968.5	950	927	819	819	809.5	802.5	792.5	791.5	775.5	766.5	744	582	561.5	520.5	541.5	499	490.5	489	7	4	444.5	428	420	419.5				379.5
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H69752 T24115	AE0861 T33942	T34365 S44900	A65061	AD0675 A91085	C85930	T34366	T33557	A69853	T19383	T27092	T23776
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455 485	452 478	462	450	428 450	450	455	629	422	493	516	487
14.3	14.1 14.1	14.0	13.8	13.7	13.6	13.2	13.0	12.9	12.8	12.7	12.5
373 371	369 368.5	366.5	361	358.5 357	357	346.5	339.5	338.5	334.5	331.5	326
30 31	32 33	34 35	36	38	39	40	41	42	43	44	45

## ALIGNMENTS

PESENT 1  Secure 10: 1  State 10: 20: 10: 10: 10: 10: 10: 10: 10: 10: 10: 1
RESULT G88553 G88553 G88553 C; Specie C; Dates: C; Dates: R; anonym Science A; Reference A; Reference A; Reference A; Residu A;

4,

Length 560;

Indels

84

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A;Molecule type: mRNA
A;Residues: 1-560 <RES>
A;Cross-references: EMBL:U07609; NID:9507414; PIDN:AAA19646.1; PID:9507415
                                                                                                                                                                                                                                         85 EHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIF 144
                                                                                                                                                                                                                                                                                                                                                                                                                              320 LRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFL 379
                                                                                                                                                                                                                                                                                                                                                205 GAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKE 264
                                                                                                                                                                                                                                                                                                                                                                                                            265 YILSSLKNQLSSQKSV----PWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEV 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    380 VAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMI 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      393 LVVGY-SHSKGVAISFLVLAVGFSGFALSGFNVNHLDIAPRYASILMGISNGVGTLSGMV 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30 EPAPVCCSA-----RYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECA
                                                                                                                                                                                                                                                                                                                                                                  145 ATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 35.4%; Score 927; DB 2; L
Best Local Similarity 39.4%; Pred. No. 6.6e-67;
Matches 184; Conservative 89; Mismatches 168;
    preliminary; translated from GB/EMBL/DDBJ
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Best Local Similarity 36.38
Matches 165; Conservative
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C:Species: Rattus norregicus (Norway rat)
C:Species: Rattus norregicus (Norway rat)
C:Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 05-Nov-1999
C:Accession: 159302
R:Ni, B.; Rosteck, P.R.; Nadi, N.S.; Paul, S.M.
R:Ni, B.; Rosteck, P.R.; Nadi, N.S.; Paul, S.M.
A:Title: Cloning and expression of a cDNA encoding a brain-specific Na(+)-dependent inor
A;Reference number: 159302; MUID:94261635
A;Accession: 159302
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                                                                                                                                    421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVA 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  279
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 GMAISGLQYAGFVVNYLEIAPPFSGTVMGTGNTISALAGIISPAVSSYLTPNGTQEEWQM 420
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   340 LCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYS-LAVAFLTI 398
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                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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                                IGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA-ISDHQGH 493
                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                             Length 472;
                                                                                                                                                                                                                                                                                                                                                                                         36.3%; Score 950; DB 2; Length 47:
41.0%; Pred. No. 7.6e-69;
Live 86; Mismatches 173; Indels
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Matches 187; Conservative
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probable sodium-dependent inorganic phosphate cotransporter - Caenorhabditis elegans C; Species: Caenorhabditis elegans C; Species: Caenorhabditis elegans C; Dateies: Caenorhabditis elegans C; Dateies: Og-Jun-2000 #sequence_revision Og-Jun-2000 #text_change Og-Jun-2000 (C; Accession: T43650 PR.Lee, R.Y.N.; Sawin, E.R.; Chalfie, M.; Horvitz, H.R.; Avery, L. Submitted to the EMBL Data Library, September 1998 P. Description: EAT-4, a homolog of a mammalian sodium-dependent inorganic phosphate (A; Reference number: 222599 P. A; Reference number: 222599 P. A; Retaus: preliminary; translated from GB/EMBL/DDBJ A; Molecule type: mRNA P; Residues: 1-563 < LEE> A; Residues: 1-563 < LEE> P. Experimental source: EMBL:AF095787; PIDN:AAC64972.1 P. Experimental source: strain Bristol N2
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C;Function:
A;Description: is necessary for glutamatergic neurotransmission
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Sodium/phosphate transport protein, renal - rabbit
N;Alternate names: sodium/phosphate cotransporter
C;Species: Oryctolaqua cuniculus (domestic rabbit)
C;Becies: Oryctolaqua cuniculus (domestic rabbit)
C;Accession: A56410; 827951
R;Werner, A.; Moore, M.L.; Mantei, N.; Biber, J.; Semenza, G.; Murer, H.
Proc. Natl. Acad. Sci. U.S.A. 88, 9608-9612, 1991
A;Title: Cloning and expression of cDNA for a Na/P-i cotransport system of kidney cor A;Accession: A56410; MUID:92052140
                                                                                                                                                                                               406
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A;Molecule type: mRNA
A;Residues: 1-465 <WER>
A;Cross-references: GB:M76466; NID:g165689; PIDN:AAA31461.1; PID:g165690
C;Keywords: kidney; transmembrane protein
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                                                                                                                                                                              348 AIPHLVMGCVVLMGGQLADYLRSNKILSTTAVRKIFNCGGFGGBAFMLIVAYTTSD-TT
                                                                                                                                                                                                                                                                                                                                 33 PVCCSARYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKV
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                                                                                                                     AVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSL
                                                                                                                                                                                                                                                                                  392 AVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGPIIARSLTPEN
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Matches 164;
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C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Bate: 10-May-2001 #sequence_revision 10-May-2001 #text_change 10-May-2001
C;Accession: H88548
R;anonymous, The C. elegans Sequencing Consortium.
Science 282, 2012-2018, 1998
A;Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog
A;Reference number: A7500; MuID:99069613; PMID:9851916
A;Note: see websites genome.wustl.edu/gsc/C_elegans/A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
A;Status: preliminary
A;Molecule type: DNA
A;Status: Preliminary
A;Molecule type: DNA
A;Residues: 1-576 cSTC>
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C;Genetics:
A;Gene: ZK512.6
A;Map position: 3
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                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           156 AADFGVGALVA-LRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSL
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3.5e-58;
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Pred. No. 3
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36.3%;
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A;Molecule type: DNA
A;Residues: 1-573 <W12>
A;Cross-references: EMBL:248055; PIDN:CAA88135.1; GSPDB:GN00021; CESP:K10G9.1
                                                                                                A;Gene: CESP:K10G9.1
A;Map position: 3
A;Introns: 38/3; 87/3; 224/1; 272/3; 322/3; 444/3; 476/3; 496/1; 517/2
                                                          A; Experimental source: clone T07A5 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A,Gene: GDB:SLC17A1, NPT1
A,Cross·references: GDB:141889,
A,Map position: 6p23-6p21.3
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Matches 180; Conservative
                                                                                                                                                                                                                                                         Conservative
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Best Local Similarity
Matches 171; Conserv
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Best Local S
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                                                                          C; Accession: S69915
R; Chong, S. S.; Kozak, C. A.; Liu, L.; Kristjansson, K.; Dunn, S. T.; Bourdeau, J. E.; Hughe
M. J. Physiol. 268, 1038-1045, 1995
A; Title: Cloning, genetic mapping, and expression analysis of a mouse renal sodium-depen
A; Reference number: S69915
A; Accession: S69915
A; Accession: S69915
A; Accession: Breliminary
A; Molecule type: mRNA
A; Residues: 1-465 < CHO>
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C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 29-Oct-1999
                                                              #text_change 05-Nov-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              303 SLPYLLAYICGILAGQMSDFFLTRKIFSIVTVRKLFTTLGSFCPVIFIMCLLYLSYNFYS 362
                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:X77241; NID:9887522; PIDN:CAA54459.1; PID:9887523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93 LHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLF 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           213 SLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKN 272
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             363 TVIFLTLANSTLSFSYCGQLINALDIAPRYYGFLKAVTALIGMFGGLISSTLAGLILNQD 422
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        11 PGFCSFRYGLAILLHFCNIAIMAQRVCLNLTWVAMV------NNTGSPHLSNESVVEM 62
                                                                                                                                                                                                                                                                                                                                                                                                                             33 PVCCSARYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKV 92
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                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                        30.7%; Score 802.5; DB 2; ilarity 36.5%; Pred. No. 5.8e-57; Conservative 89; Mismatches 191;
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A;Accession: T23589
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Rolecule type: DDA
A;Residues: 1-573 <WILL>
A;Residues: 1-573 <WILL>
A;Cross-references: EMBL:236282; PIDN:CAA85289.1; G
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A;Reference number: 219915
A;Accession: T24636
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                   C;Species: Mus musculus (house mouse)
C;Date: 14-Feb-1997 #sequence_revision 13-Mar-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     452 TIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
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                      mouse
                    sodium-phosphate transport system 1 -
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R; Mortimore, B.
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Best Local Similarity
Matches 166; Conserv
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A.Title: Molecular cloning of the cDNA encoding a human renal sodium phosphate transp
A.Reference number: A48916; MUID: 94117004
A.Accession: A48916
A.Status: preliminary
A.Molecule type: mRNA
A.Residues: 1-467 <CHO>
A.Cross-references: GB:X71355; NID: 9450531; PIDN: CAA50490.1; PID: 9450532
C.Genetics:
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                                                                                                                                                                                                                                                                                                                                                               149 FHPFTDIFVMVIQVMQGLALGVCXPAMHGVWKYWAPPLERSKLATTTFTGASVGVMVGLP 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99 KKYRWDAETQCWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAAD 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KNQLSSQKSVPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNIQENGFL 330
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                                                                                                                                                                  88
                                                                                                            39 RYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTG 98
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                                                                                                                                                                                                                                                  209 ASAYLVSHFSWSTPFYVFGALGIVWSILMIYVSGTSPETHGYISADEKKYITEKVGSVAV
                                                                                                                                                                                                                                                                                                                                                                                                                                              LSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYILS----SL
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                                                                                                                                                                     ----VHE---
                                                                                                                                                                                                                                                                                                                                  159 FGVGA---LVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLP
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  Length 573;
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R;Chong, S.S.; Kristjansson, K.; Zoghbi, H.Y.; Hughes,
Genomics 18, 355-359, 1993
30.3%; Score 792.5; DB 2; 37.1%; Pred. No. 4.7e-56; iive 85; Mismatches 164;
                                                                                                                                              30.2%; Score 791.5; DB 2; 37.4%; Pred. No. 4.5e-56; iive 79; Mismatches 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OMIM: 182308
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Oy 266 ILSSLKNOL-SSQKSVPWIPMIKSLPLWALVVAHFSVNWTFYTLLTLLFTYWKEVLRFNI 324	Query Match Best Local Similarity 35.6%; Pred, No. 5:56-54; Indels 41; Gaps 9; Matches 164; Conservative 9; Mismatches 166; Indels 41; Gaps 9; Matches 164; Conservative 9; Mismatches 166; Indels 41; Gaps 9;  Qy 39 RYNLAFLSFEGFFULYSLRVNLSVALVUNDSNTTAKDNRTSVECAEHSAPIKVLHNOTG 98  1::  -  -  -  -  -  -  -  -  -  - - - -
1	Dendent phosphate cotransporter - human less Homo sapiens (man) 1. 29-May-1998 #sequence_revision 29-May-1998 #text_change 05-Nov-1999 1. 29-May-1998 #sequence_revision 29-May-1998 #text_change 05-Nov-1999 1. 29-May-1998 #sequence_revision 29-May-1998 #text_change 05-Nov-1999 1. 20-May-1998 #sequence_revision 29-May-1998 #text_change 05-Nov-1999 1. 20-May-1998 #sequence_revision 04 May-1998 #text_change 05-Nov-1999 1. 20-May-1998 #sequence_revision 05-May-1998 #text_change 05-Nov-1999 1. 20-May-1998 #sequence_revision 05-May-1998 #text_change 05-Nov-1999 1. 20-May-1998 #text_change of a Na(+)-dependent phosphate co-transporter ence number: 19473 #NUD:95126933 18: preliminary translated from GB/EMBL/DDBJ 18: preliminary translated from GB/EMBL/DDBJ 18: preliminary translated from GB/EMBL/DDBJ 18: preliminary translated from GB/EMBL/DDBJ 18: preliminary translated from GB/EMBL/DDBJ 18: preliminary translated from GB/EMBL/DDBJ 18: preliminary translated from GB/EMBL/DDBJ 18: preliminary translated from GB/EMBL/DDBJ 19: preliminary translated f

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A; Title: Genome sequence of the nematode C. elegans: a platform for investigating bic A; Reference number: A75000, MUTD: 99069613; PMID: 9851916
A; Note: see websites genome.wustl.edu/gsc/C_elegans/ and www.sanger.ac.uk/Projects/C_A; Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; A; Accession: B89135
A; Astatus: preliminary
A; Molecule type: DNA
A; Residues: 1-501 <STO>
A; Residues: 1-501 <STO>
A; CROSS-references: GB:chr_V; PIDN:AAC25800.1; PID:g2384837; GSPDB:GN00023; CESP:F25G C; Genetics:
A; Gene: F2566.7
A; Map position: 5
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R;Andrews, S. Submitted to the EMBL Data Library, July 1997
A;Description: The sequence of A. thaliana IG005110.
A;Reference number: 214347
A;Accession: T01534
A;Accession: T01534
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-413 <AND>A;Cross-references: EMBL;AF013293; NID:g2252823; PID:g2252847
A;Experimental source: cultivar Columbia C;Genetics: A;Map position: 4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123 QIPGGYVASRSGGK--LLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYP 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 ALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIIT 122
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Conservative 101; Mismatches 201;
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Matches 149; Conser
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                                                                                                                                                                                                                                                  hypothetical protein At2g29650 [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
C;Accession: H84698
R;Idn, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Bentto, M.I.; Town, C.D.; Fujii, C.Y.;
R;Idn, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Bentto, M.I.; Town, C.D.; Fujii, C.Y.;
euss, D.; Mterman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J. XTitle: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A;Reference number: A84420; MUID:20083487
A;Accession: H84698
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-512 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
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C;Species: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 10-May-2001
C;Accession: B89135
R;anonymous, The C elegans Sequencing Consortium.
Science 282, 2012-2018, 1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSF 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----SAEYGWNPATVGLIQSSF 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116 FYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGE 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGI 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236 VGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKNQLSSQKSVPWIPMLKSLPLWAIV 295
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               471
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Pred. No. 3.3e-52;
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|119 DRVNMSIAILPM------
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33.9%;
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Matches 166; Conservative
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499 VIWNLFSTGE 508
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Genetics:
A;Gene: At2g29650
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264 QGGIYGPFVIFGLSGFLWLLVWLSATSSAPDRHPQITKSELEYIKQKKQISTMENKRIST 323
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                                                                                                                                                                                                                 324 SGIPPFGRLLSKMPTWAVIVANSMHSWVYHV-------NLKQAAWFSAVP-- 366
                                                                                                                                                                                                                                                                    337 GCWLCMILSGQAA---DNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSL-A 392
                                                                                                                                                                                                                                                                                                                                                                  144 WSKSFSGIVQSSFLWGYLISPIAGGTLVDRYGGKVVMAWGVALWSLATFLTPWAADSSLW 203
                                                                  --WSWMAFTGYIAGFWSDLLIRRGTSITLTRKIMQSIGFIGFGIALI--GLTTAKQPLVA
                                           393 VAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGPIIARSLTPENT
                                                                                                                 223 YMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEXI-----LSSLKNQLSSQ
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hypothetical protein F13112.30 - Arabidopsis thaliana
hypothetical protein F13112.30 - Arabidopsis thaliana
hypothetical protein F13112.30 - Arabidopsis thaliana
(mouse-ear cress)
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Accession: T45634
A;Reference number: Z23010
A;Accession: T45634
A;Status: preliminary
A;Aolecule type: DNA
A;References: EMBL;Al33292
A;Reperimental source: cultivar Columbia; BAC clone F13112
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                                                                                                                                                                                                                                                                                        ---SQEYNWSSATV 100
                                                                                                                                                                                                                                                                                                                         109 GWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALR 168
                                                                                                                                                                                                                                                                                                                                                                                                   169 ALEGLGEGVTYPAMHAMMSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTY 228
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                                                                                                                                     Gaps
                                                                                                                                                                                                           21 KSEESDITEGVVPSADGSAEAILVEGNLQNASPWWQQFPR------RWVIVLLCFS 70
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                                                                                                                                                                      2 KSPVSDL----APS-DGE-----EGS--DRTPLLQRAPRAEPAPVCCSARYNLAFLSFF 48
                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 163;
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                                                                                                 Length 413;
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A;Introns: 79/3; 115/3; 128/3; 200/3; 288/3; 331/3; 353/3; 382/1
A;Note: A_IG005110.nn
C;Superfamily: hexuronate transporter
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A;Introns: 35/2; 153/3; 229/2; 350/3; 399/3; 445/3; 457/1
A;Note: F13112.30
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                                                                                              Score 561.5; DB 2;
Pred. No. 1.3e-37;
69; Mismatches 139;
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                                                                                                                                                                                                                                                                                    71 SFLLCHMDRVNMSIAILPM-----
                                                                                              Query Match 21.5%;
Best Local Similarity 28.1%;
Matches 145; Conservative 6
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Best Local Similarity 32.45
Matches 126; Conservative
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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
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OM protein - protein search, using sw model

July 15, 2002, 08:25:26 ; Search time 17.92 Seconds (without alignments) 1069.541 Million cell updates/sec Run on:

US-09-776-865-4 2617 1 MKSPVSDLAPSDGEEGSDRT......LFAKGEVQNWAISDHQGHRN 495 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

105224 seqs, 38719550 residues Searched:

105224 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_40:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

	Description	003567 caenorhabdi	P34644 caenorhabdi	028722 o renal sod	_		Q14916 homo sapien		000624 homo sapien	homo	caenc	P42237 bacillus su	-	O34456 bacillus su	P31457 escherichia	_	P42613 escherichia	P39398 escherichia	P42609 escherichia	P42205 pseudomonas		Q44470 agrobacteri		P37948 bacillus su	P71369 haemophilus		P08194 escherichia	Q05181 pseudomonas			P94131 acinetobact	P77589 escherichia	P77228 escherichia	,
SUMMARIES	ΙD	YLD2 CAEEL	YOO6_CAEEL	NPT1_RABIT	NPT1_MOUSE	NPT1_RAT	NPT1_HUMAN	YRT3_CAEEL	NPT3_HUMAN	NPT4_HUMAN	YKH4_CAEEL	GUDP_BACSU	GUDP_ECOLI	EXUT_BACSU	DGOT_ECOLI	YYBO_BACSU	GARP_ECOLI	YJJL_ECOLI	EXUT_ECOLI	GUDP_PSEPU	YFAV_ECOLI	TUB4_AGRVI	TUB3_AGRVI	GLPT_BACSU	YB04_HAEIN	YAOI_SCHPO	GLPT_ECOLI	PHT1_PSEPU	GLPT_HAEIN	GLPT_HUMAN	MUCK_ACICA	MHPT_ECOLI	YDFJ_ECOLI	F TOOL BY
	DB	-	٦			<del>, ,</del>	-	<del>, -</del>	Н	Н	-	<del>-</del>	-	~	~	~	Н	~	Н	<del>, -</del> 1	~	1	Н	Н	<b>-</b>	Н	Н	Н	Н	Н	-	П	П	•
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æ	Query Match	37.0	31.3			30.5		29.3						12.9				11.1		٠.	•		8.6	•	7.6	7.6	7.5	7.3	٠	•	•		6.7	
	Score	968.5	819	809.5	802.5	797.5	790.5	766.5	672	603.5	489	373	361	338.5	320.5	314	300	291	281.5	261.5	246	226	226	201.5	199	199	195.5	190	189.5	188	187.5	•	174.5	
	Result No.	-	8	m	4	S	9	7	œ	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	ŗ

P39637 bacillus su Q43975 acinetobact	Q9pjj8 chlamydia m P38125 saccharomyc	084548 chlamydia t	P39352 escherichia P37514 bacillus su	Q51955 pseudomonas	P15365 saccharomyc P21191 staphylococ		P31122 escherichia
YWFA_BACSU PCAK_ACICA	UHPT_CHLMU YB30_YEAST	UHPT_CHLTR	YYAJ_BACSU	PCAK_PSEPU	DALS_IEAST NORA_STAAM	SOTB_ECO57	SOTB_ECOLI
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412	456 572	456	451	448	388 388	386	396
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166 163	161.5 160	159.5	158	155	151.5	149.5	149.5
34 35	36 37	38	v 4 v 0	41	4 4	44	45

## ALIGNMENTS

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452 TIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
  M., Smaldon N., Smith A.,
                                                                                                                                                                                         EMBL; 222177; CAA80150.1; -.
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Best Local Similarity 36.3
Matches 165; Conservative
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142
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576 AA;
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                                Wohldman P.
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MEDLINE-94150718; PubMed-7906398;
Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Wilson R., Ainscough R., Anderson K., Coper J., Coulson A.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.,
Craxton M., Dear S., Du Z., Durbin R., Favello A., Eraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.,
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R.,
                                                                                                                                                                                                           SAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFAT 146
                                                                                                                                                                                                                                                                        122 ALLTLINDVAARTSEYALAILRAAIGFLQGATFPAMHTMWSVWGPPLELSVLTGVTYAGA 181
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
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                                                                                                                                                                                                                                                                                                                                                                                          147 AIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGA
                                                                                                                                                                                                                                                                                                                 182 QIGNVIVLPLSGFLCEYGFDGGWPSIFYIIGVFGVLWTAVWWYVSSDKPATHPRITPEEK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              IGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA-ISDHQGH 493
                                                                                                                                                15;
                                                                                                                            Length 493;
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Last annotation update)
protein 2K512.6 in chromosome III.
                                                                                             60792715D32553DD CRC64;
                                                                                                                           ; Score 968.5; DB 1;
; Pred. No. 2.9e-62;
89; Mismatches 179;
                   POTENTIAL.
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01-FEB-1995 (Rel. 31, Last seq
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40.5%;
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Hypothetical 52.2 kDa
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375
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493 AA;
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nes 193;
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01-MAR-2002
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96 QTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPL 155
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                                                                                                      ij
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                                                                                                      oŧ
                                                                                                                                                       Natúre 368:32-38(1994).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: TO MAMMALIAN SODIUM/PHOSPHATE COTRANSPORTER 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24;
                        Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
                                                                                                         '2.2 Mb of contiguous nucleotide sequence from chromosome III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 576;
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Smith M., Sonnhammer E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71F3A9EFBE5F84CC CRC64;
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Wormbep; XES12.6; CE01109.
InterPro; IPR003362; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
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TPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVV 212
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                                                                                                                                                                                                                                                                                                                                                                                                           SLC17A1 OR NPT1
                                                                                                                                                                                                                                                                                                        NPT1_MOUSE
Q61983;
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                                                                                                                     Renal sodium-dependent phosphate transport protein 1 (Sodium/phosphate cotransporter 1) (Na(+)/PI cotransporter 1) (Renal sodium-phosphate transport protein 1) (Renal Na(+)-dependent phosphate cotransporter 1)
                                                                                                                                                                                                                                                                     Werner A., Moore M.L., Mantei N., Biber J., Semenza G., Murer H.;
"Cloning and expression of cDNA for a Na/Pi cotransport system of
kidney cortex.";
Proc. Natl. Acad. Sci. U.S.A. 88:9608-9612(1991).
-!- FUNCTION: IMPORTANT FOR THE RESORPTION OF PHOSPHATE BY THE KIDNEY.
MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE INTO CELLS VIA
NA+ COTRANSPORT IN THE RENAL BRUSH BORDER MEMBRANE.
-!- SUBCELLULAR LOCATION: Integral membrane protein.
-!- TISSUE SPECIFICITY: KIDNEY CORTEX AND LIVER.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33 PVCCSARYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKV 92
                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Symport; Sodium transport
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N-LINKED (GLCNAC. . .) (POTENTIAL)
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                                                                                       Created)
Last sequence update)
Last annotation update)
30.9%; Score ov...
36.0%; Pred. No. 6.6e-
+ive 86; Mismatches
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                                                                                                                                                                                                                                              TISSUE-Kidney cortex;
MEDLINE-92052140; PubMed=1946375;
                                                                                                                                                                               Oryctolagus cuniculus (Rabbit).
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                                                                 STANDARD;
                                                                                     (Rel. 35, (Rel. 35, 1) (Rel. 35, 1) (Rel. 36, 1)
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275
324
357
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198
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304
337
363
428
428
465 AA;
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                                                                                                                                                                   SLC17A1 OR NPT1
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                                                                                    01-NOV-1997
01-NOV-1997
                                                                                                            15-JUL-1998
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                                                                 NPT1_RABIT
Q28722;
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Matches 16
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                                                      NPT1_RABIT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Renal sodium-dependent phosphate transport protein 1 (Sodium/phosphate cotransporter 1) (Na(+)/PI cotransporter 1) (Renal sodium-phosphate transport protein 1) (Renal Na(+)-dependent phosphate cotransporter
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Am. J. Physiol. 268:F1038-F1045(1995).

-!- FUNCTION: IMPORTANT FOR THE RESCRETION OF PHOSPHATE BY THE KIDNEY.

MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE INTO CELLS VIA NA+ COPRANSPORT IN THE RENAL BRUSH BORDER MEMBRANE.

-!- SUBCELLULAR LOCATION: Integral membrane protein.

-!- TISSUE SPECIFICITY: KIDNEY.
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                                                                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                                                                                                                                                                                                                                                                                                                             303 SLPYLFAWICGVIAGHTADFLMSRNMLSLTAIRKLFTAIGLLLPIVFSMCLLYLSSGFYS 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Symport; Sodium transport.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
SLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKN
                                                                                                                                          QLSS-QKSVPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNIQENGFLS
                                                                                                                                                                                                                                                                                                      243 QGSSTRQSLPIKAMIKSLPLWAISFCCFAYLWTYSRLIVYTPTLINSMLHVDIRENGLLS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            452 TIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    423 PESSWFKIFLLMSIINVISVIFYLIFAKAEIQDWA 457
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InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X77241; CAA54459.1; -.
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Matches 163; Conservative
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465 AA;
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NPT1_HUMAN
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01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
16-JUL-1998 (Rel. 36, Last annotation update)
Renal sodium-dependent phosphate transport protein 1 (Sodium-phosphate cotransporter 1) (Na(+)/Pl cotransporter 1) (Renal sodium-phosphate transport protein 1) (Renal Na(+)-dependent phosphate cotransporter
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                                                                                                                                                                                                                        TPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVV 212
                                                                                                                                                                                                                                                                                               SLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKN 272
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                                                                                                                                                 Gaps
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBL_TaxID=10116;
                                                                                                                                                                    PVCCSARYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKV 92
                                                                                                                                                                                        PGFCSFRYGLAILLHFCNIAIMAQRVCLNLTMVAMV------NNTGSPHLSNESVVEM 62
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                                                             N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
CG7EE25A2C291EEF CRC64;
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"Molecular cloning of two rat Na+/Pi cotransporters: evidence differential tissue expression of transcripts.";
Cell. Mol. Biol. Res. 41:451-460(1995).
                                                                                                                            DB 1; Length 465;
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les 191;
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Q62795;
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FUNCTION: IMPORTANT FOR THE RESORPTION OF PHOSPHATE BY THE KIDNEY. MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE INTO CELLS VIA NA+ COTRANSPORT IN THE RENAL BRUSH BORDER MEMBRANE. SUBCELLULAR LOCATION: Integral membrane protein.
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LINKED (GLCNAC. ..) (POTENTIAL).
LINKED (GLCNAC. ..) (POTENTIAL).
28BBBFBDCSCOACS2 CRC64;
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                                                                                                                                                                                                                                                                                                                               EMBL; U28504; AAC52487.1; ...
InterPro; IPR003662; sub_transporter.
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                          01-NOV-1997 (Rel. 35, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
Renal sodium-dependent phosphate transport protein 1 (Sodium/phosphate cocransporter 1) (Na(+)/Pl cotransporter 1) (Renal sodium-phosphate transport protein 1) (Renal Na(+)-dependent phosphate cotransporter 1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE INTO CELLS VIA NA+ COTRANSPORT IN THE RENAL BRUSH BORDER MEMBRANE.
                                                                                                                                                                                                                                                                                                                                                                 Miyamoto K.-I., Tatsumi S., Sonoda T., Yamamoto H., Minami H., Taketani Y., Takeda E.; "Cloning and functional expression of a Na(+)-dependent phosphate co-
                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem. J. 305:81-85(1995).
-!- FUNCTION: IMPORTANT FOR THE RESORPTION OF PHOSPHATE BY THE KIDNEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Integral membrane protein.
TISSUE SPECIFICITY: EXPRESSED IN KIDNEY CORTEX, LIVER AND BRAIN
BUT NOT IN OTHER TISSUES.
                                                                                                                       Homo sapions (Human).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Symport; Sodium transport
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                     Chong S.S., Kristjansson K., Zoghbi H.Y., Hughes M.R.; "Molecular cloning of the CDNA encoding a human renal sodium
                                                                                                                                                                                                                                                                  phosphate transport protein and its assignment to chromosome
                                                                                                                                                                                                                                                                                                                                                                                                          transporter from human kidney: cDNA cloning and functional expression.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -> V (IN REF. 2).
-> C (IN REF. 2).
-> G (IN REF. 2).
687A19F245C4ED16 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
RA -> LM (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transmembrane; Glycoprotein;
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Pfam; PF00083; sugar_tr; 1.
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EMBL; D28532; BAA05888.1; -.
                                                                                                                                                                                                            TISSUE=Kidney;
MEDLINE=94117004; PubMed~8288239;
                                                                                                                                                                                                                                                                                                                                                      MEDLINE-95126933; PubMed=7826357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50884 MW;
                                                                                                                                                                                                                                                                                              Genomics 18:355-359(1993)
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419
451
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             01-NOV-1997 (Rel. 35, 01-NOV-1997 (Rel. 35, 16-OCT-2001 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                       TISSUE=Kidney cortex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          165 AA;
                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                     NCBI_TaxID=9606;
                                                                                                            SLC17A1 OR NPT1
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                                                                                                                                        HSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFA 145
                                                                                                                                                          205
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                                                                    33 PVCCSARYNLAFLSFFGFFVLYSLRVNLSVALVDMVDS-----NTTAKDNRTSYECAE 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                            176 FLIGPFIVLLVTGVICESLGWPMVFYIFGACGCAVCLLMFVLFYDDPKDHPCISISEKEY
                                                                                                                                                                                                                                                                                                                                                 ILSSLKNQL-SSQKSVPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNI
                                                                                                                                                                                                                                                                                                                                                                   385 IGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGPIIA
                                                                                                                                                                                                          146 TAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAG
                                                                                                                                                                                                                                                                              206 AQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEY
                                                                                                                                                                                                                                                                                                                                                                                                                     QENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (FEB-1995) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: TO MAMMALIAN SODIUM/PHOSPHATE COTRANSPORTER 1.
   Length 465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              445 RSLT-----PENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Hypothetical 60.5 kDa protein T07A5.3 in chromosome III.
   DB 1;
                   1.5e-49
30.2%; Score 790.5; I
37.7%; Pred. No. 1.5e.
ive 78; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA
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                   Best Local Similarity 37.7
Matches 177; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caenorhabditis elegans.
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125
148
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TRANSMEM 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50
105
128
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Q10046;
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   Query Match
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                                                                                                                                      98
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or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SAPIKVLHNQT------GKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGK 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERS 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  197 KLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHK 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      257 TITPYEKEYILSSLKNQLSSQ-KSVPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLPTY 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PATRKGPDFCSLRYGLALIMHFSNFTMITQRVSLSIAIIAMV--NTTQQQGLSN---AST
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27 PRAEPAPVCCSARYNLAFLSFFGFFVLYSLRVNLSVALVDMYDSNTTAKDNRTSYECAEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human).
Vertebrata; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                         Transport; Transmembrane; Glycoprotein; Phosphorylation; Symport;
Sodium transport.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25.7%; Score 672; DB 1; Length 436; 38.9%; Pred. No. 4.2e-41; live 69; Mismatches 133; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LINKED (GLCNAC. . .) (Pode 1902F618E83A572F CRC64;
                     SUBCELLULAR LOCATION: Integral membrane protein.
    INTO CELLS VIA NA+ COTRANSPORT (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-JUL-1998 (Rel. 36, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update) 03-MAR-2002 (Rel. 41, Last annotation update) oction proposed to the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the
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Μ
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Best Local Similarity 38.9
Matches 139; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68
69
436 AA;
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000476;
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Ruddy D.A., Kronmal G.S., Lee V.K., Mintier G.A., Quintana L.,
Domingo R. Jr., Meyer N.C., Irrinki A., McClelland E.E., Fullan A.,
Mapa F.A., Moore T., Thomas W., Loeb D.B., Harmon C., Tsuchihashi Z.,
Wolff R.K., Schatzama R.C., Feder J.N.;
"A 1.1-Mb transcript map of the hereditary hemochromatosis locus.";
Genome Res. 7:441-456(1997).
-- I- FUNCTION: MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      89 REFLWTGAEVGMMESSFFYGYAASQIPAGVLAAKFAPNKIFMLGILVASFMNILSAISFN 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149 FHPYIDIFVMVVQAVQGLALGVLYPAMHGVWKFWAPPLERSKLATTAFTGSSVGVMTGLP 208
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 271 KNQLSSQKSVPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLTLLPTYMKEVLRFNIQENGFL 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99 KKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAAD 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    331 SAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGC--- 387
                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                   39 RYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTG 98
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159 FGVGA---LVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLP
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAR-2002 (Rel. 36, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Sodium-dependent phosphate transport protein 3 (Sodium/phosphate cotransporter 3) (Na(+)/PI cotransporter 3).
                                                                                                                                                                                                                                                                                                   41;
                                                                                                                                                                                                                                                       Score 766.5; DB 1; Length 544; Pred. No. 9.2e-48;
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                                                                                                                                                                                              4615B3C27D9F86CC CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         446 SLIPENTIGEWQIVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
                                                                                                                                                                                                                                                                             ; Pred. No. 9.2e-48; 90; Mismatches 166;
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Matches 164; Conservative
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544 AA;
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                                                                              01-FEB-1994
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                                                                                       01-MAR-2002
                                                YKH4_CAEEL
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YKH4_CAEEL
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                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                       SAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFAT 146
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 PRKGPS--LCSARYGIALVLHFCNFTTIAQNVIMNITMVAMVNSTSPQSQLNDSSEV--- 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64 -LPV-----ILG----- 87
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23.1%;
Best Local Similarity 29.9%;
Matches 138; Conservative 86
                                                                                                                                                                                                           EMBL; U90545; AAB53423.1; -
                                                                                                                                                                                                                                                                                                                                                           401 AA;
                                                                                                                                                                                                                                          Sodium transport.
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135
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                 PubMed=9149941;
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between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                              Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.,
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A.,
Fulton L., Gardner A., Kershaw J., Hillier L., Jier M.,
Johnston L., Jones M., Kershaw J., Kirsten J., Lalsster N.,
Latrellle P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R.,
Sims M., Smaldon N., Smith A., Smith A., Sonnhammer E., Staden R.,
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                          Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
NCBI_TaxID=6239;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wohldman P.; "2.2 Mb of contiguous nucleotide sequence from chromosome III of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 368:32-38(1994).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: TO MAMMALIAN SODIUM/PHOSPHATE COTRANSPORTER 1.
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                                                                          (Rel. 28, Last sequence update)
(Rel. 41, Last annotation update)
63.0 kDa protein C02C2.4 in chromosome III.
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InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
                                                                                                                                                                                                                                                                                                                                            STRAIN=BRISTOL N2;
MEDLINE=94150718; PubMed=7906398;
                                                 28, Created)
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568 AA;
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                                                                                          135 GKLLLGFGIFATAIFTLFTP-LAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPL 193
                                                                                                                                                                                                                                                                                                                                                                                                            253 ETHKTITPYEKEYILSSLKNQL---SSQKSVPWIPMLKSLPLWAIVVAHFSYNWTFYTLL 309
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   45 SRRLHIVLLCMIGFFCTTFMRIHFALTMTCMVNSTALAVENEIKLAGNSNVSEISIIEEI 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310 TL-LPTYMKEVLRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFS 368
                                                                                                                                                                                                                                  165 PRHVLOISVALYILVTVITPFLATHFGYFSVFLARIGMGLGEGFVFPTNNAIIGNWFPSS
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                                                         93 ------LHNQTGKK-----YRWDAETQGWILGSFFYGYIITQIPGGYVASRSG
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"Determination of a 21548 pp nucleotide sequence around the idegrees region of the Bacillus subtilis chromosome.";
Microbiology 141:269-275(1995).
-!- FUNCTION: UPPRAKE OF D-GLOCARAPE.
-!- SUBCELLULAR LOCATION: Integral membrane protein.
-! SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
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01-NOV-1995 (Rel. 32, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Probable glucarate transporter (D-glucarate permease).
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InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
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MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Rilety M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
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Escherichia coli.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
Escherichia.
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                                                                                                                                                                                                                                                                                                   Length 455;
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Best Local Similarity
Matches 120; Conserv
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15-JUL-1998
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  225 INMDQQNTKVKVPFSVKWGQIKQLLGSRMMIGVYIGOYCINALTYFFITWFPVYLVQARG 284
                                                                                  882 AGFIGCDYS----LAVAFLTISTTLGGFCSSGFSINHLDIAP-SYAGILLGITNTFATIP 436
                                                       285 MSILKAGFVASVPAVCGFIGGVLGGIISDWLMRRTGSLNI-ARKTPIVMGM-----LLS
                             322 FNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVA
                                                                                                                                                                 397 GIVTPIAIGYIV - GTTGSFNGAL - IYVGVHALIAVLSYLVLVGDIK 440
                                                                                                                                       GMIGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQ
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30-MAY-2000 (Rel. 39, Last sequ
16-OCT-2001 (Rel. 40, Last anno
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Transmembrane; Transport; C
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422 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213 SLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYI----L 267
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                                                    POSSIBLE FUNCTION.
MEDLINE=98447507: PubMed=9772162;
Hubbard B.K., Koch M., Palmer D.R., Babbitt P.C., Gerlt J.A.;
"Evolution of enzymatic activities in the enolase superfamily: characterization of the (D)-glucarate/galactarate catabolic pathway in Escherichia coli.",
                                                                                                                                                                                         Monterrubio R., Baldoma L., Obradors N., Aguilar J., Badia J., "A common regulator for the operons encoding the enzymes involved D-galactarate, D-glucarate, and D-glycerate utilization in
                                                                                                                                                                                                                              Escherichia coll.";

J. Bacteriol. 181:2672-2674(2000).

J. Bacteriol. 182:2672-2674(2000).

J. Buckrion: UPTAKE OF OGLUCARATE.

SUBCELLUAR LOCATION: Integral membrane protein (Potential).

SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 450;
           "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93; Mismatches 196; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL. E0599FACCB1BB488 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13.8%; Score 361; DB 1; 24.8%; Pred. No. 7.9e-19;
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InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transport; Complete
                                                                                                                                                                              MEDLINE=20225875; PubMed=10762278;
                                                                                                                                    Biochemistry 37:14369-14375(1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MW;
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 Shao Y.;
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TRANSMEM 21
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11;
                                                                                                                                                                                                                                                                                                                                                                                      Rivolta C., Soldo B., Lazarevic V., Joris B., Mauel C., Karamata D.; "A 35.7 kb DNA fragment from the Bacillus subtilis chromosome containing a putative 12.3 kb operon involved in hexuronate catabolism and a perfectly symmetrical hypothetical catabolite-responsive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Microbiology 144:877-884(1998).
--- FUNCTION: ALDOHEXIRONATE TRANSPORT SYSTEM.
--- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).
--- SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 422;
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C2E291AF347F7EDD CRC64;
                                                                                                                                                                                                        Bacteria; Firmicutes; Bacillus/Clostridium group; Bacillus/Staphylococcus group; Bacillus.
NCBL_TaxID=1423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Score 338.5; DB 1;
; Pred. No. 3e-17;
80; Mismatches 173;
                                                                           Last sequence update)
Last annotation update)
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422 AA
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MEDLINE=98240225; PubMed=9579062;
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Best Local Similarity
Matches 96; Conserv
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                                                            223
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                                                                                                                                                                          344 LSGQAADNL-RARWNFSTLWVRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTL 402
                                                                                                                                                                                                                               271 AGGFVSDYVYKKTARKGVLFSRKVVLVTCLFSSAVLI---GFAG-------LVATTA 317
                                                                                                                                                                                                                                                                449
                                                                                                                                                                                                                                                                              AETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFT-PLAADFGVGA 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished observations (OCT-1993).
-!- FUNCTION: INTAKE OF GALACTONATE INTO THE CELL.
-!- SUBCELLULAR LOCATION: Integral membrane protein. Inner membrane
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                               42 ATQMGLIFSSFSIGYAIFNFLGGVASDRYGAKLTL---FVAMVVWSLFSGAVALAFGFVS
                                                           LVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYY
                                                                                                          224 MNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKNQLSSQKSVPWI
                                                                                                                        284 PMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYLGCWLCMI
                                                                                                                                                                                                                                                               403 GGFCSSGFSINHL------DIA-PSYAGILLGITNTFATIPGMIGPIIARSLTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Burland V.D., Plunkett G. III, Daniels D.L., Blattner F.R.; "DNA sequence and analysis of 136 kilobases of the Escherichia cogenome: organizational symmetry around the origin of replication.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Probable).
SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
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Last annotation update)
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Pfam; PF00083; sugar_tr; 1.
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EMBL; AE000446; AAC76714.1; ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
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STRAIN=K12 / MG1655;
MEDLINE=93315143; PubMed=768682;
                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUL-1993 (Rel. 26, Created)
16-OCT-2001 (Rel. 40, Last seq
16-OCT-2001 (Rel. 40, Last anno
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D-galactonate transporter.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=562;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     390 S-----LAVAFLTISTTLGGFCSSGFSINHLDIAP-SYAGILLGITNTFATIPGMI 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : :1:11 : |: |: |: |: |: |: 334 TNDPMMIMCLMALAFFG-----NGFASITWSLVS-SLAPMRLIGLTGGVENFAGGLGGIT 387
                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  103 -GLMSLIGLRAITGIFEAPAFPTNNRMVTSWFPEHERASAVGFYTSGOFVGLAFLTPLLI 161
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14 RYLTLVMIFITVVICYVDRANLAVA--------SAHIQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159 FGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330 LSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           221 VKKEARQPLTAKDWKLVFHRKLIGVYLGQFAVASTLWFFLTWFPNYLTQEKGITALKAGF
                                                                                                                                                                                                                                                                                                                      Length 430;
Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 219 VICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYIL----
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                                                                                                                                                                                                                                  POTENTIAL.
86B1902777F2E461 CRC64;
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                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                85; Mismatches 199;
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Bacillus/Staphylococcus group; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-0CT-1994 (Rel. 30, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
Hypothetical transport protein yybo.
                                                                                                                                                                                                                                                                                                                                        Pred. No. 6e-16;
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01-0CT-1994 (Rel. 30, Last seq
16-0CT-2001 (Rel. 40, Last anno
                                                                                                                                                                                                                                                      47076 MW;
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                                                                                                                                                                                                                                                 430 AA;
                                                                                                                                                                                                                                                                                                                                          Local Similarity
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                                                                                                                                                                                                                                                                                                                                                            Matches 111;
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P37489;
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RALEGLGEGUTYPAMHAMMSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWT 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   228 YVFYFFGIVGIIWFILMICLVSDTPETHKTITPYEKEYILSSLKNQLSSQKSVPWI--PM 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STISGIAVGG----WLVDYFIKKGYPNTKVYRTVIIVGMSFGFFFL---GSI-LTNNITV 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AFLTISTTLGGFCSS---GFSINHLDIAP----SYAGILLGITNTFATIPGMIGPLIARS 446
                                                                                                                                                                                                                                                                                                                                                                                                                                     49 GFFVL-YSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAET 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   108 QGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVAL 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LKSL----PLWAIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYLGCWLC 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MILSGQAADNLRARW------NFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAV 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----FHLTATE 58
                                                                                                                    SUBCELLULAR LOCATION: Integral membrane protein (Probable). SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                80;
                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match 12.0%; Score 314; DB 1; Length 435; Best Local Similarity 25.3%; Pred. No. 1.8e-15; Matches 116; Conservative 71; Mismatches 192; Indels
                                                                                                                                                                                                                                                                                                                                                     9630914D9B606208 CRC64;
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Search completed: July 15, 2002, 08:25:27 Job time: 192 sec

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Q91wv5 mus muscull Q9v905 drosophila Q09932 caenorhabdi Q9h531 homo sapien Q9vpx2 drosophila Q9vex2 drosophila Q9v6m9 drosophila Q9v6n0 drosophila Q9v6n1 drosophila Q9v6n1 drosophila Q9v6n1 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v34 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 drosophila Q9v33 caenorhabdi
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O9w1z3 drosophila
O23065 arabidopsis
                     O9vkc9 drosophila
O9tzn7 caenorhabdi
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Q9v9j0 drosophila
  drosophila
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"Identification of a novel membrane protein from mammalian cells that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 SVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYI 120
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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
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Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF244578; AAF97770.1; -- SEQUENCE 495 AA; 54536 MW; 649D7C4A59B28272 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
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Q97785 drosophila
Q23514 caenorhabdi
Q9p2u7 homo sapien
Q6234 rattus norv
O61369 drosophila
Q961h1 homo sapien
Q972c5 homo sapien
Q973w8 drosophila
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Million cell updates/sec
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0920b7 mus musculu
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Q9nra2 homo sapien
Q9vyg7 drosophila
Q9vdmO drosophila
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Q9ugh0 homo sapien
Q9nra2 homo sapien
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                                                                                                                                   1 MKSPVSDLAPSDGEEGSDRT......LFAKGEVQNWAISDHQGHRN 495
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                                                                    July 15, 2002, 08:25:02; Search time 53.59 Seconds (without alignments) 1597.919 Million cell of
                                                                                                                                                                                                          562222
          GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries

    protein search, using sw model

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Minimum Maximum Database

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Gaps

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Score

Result Š 9

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Homo sapiens
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Mancini G.M.S.;
"A new gene, encoding an anion transporter, is mutated in sialic acid
240
                                                                                                                                                      YNWTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFST 360
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Verheijen F.W., Verbeek E., Aula N., Beerens C.E.M.T., Havelaar M.C.,
Joosse M., Peltonen L., Aula P., Galjaard H., Van der Spek P.J.V.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   storage diseases.";
Nat. Genet. 23:462-465(1999).
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).
-!- SIMILARITY: EDELONGS TO THE SUGAR TRANSPORTER FAMILY.
EMBL; AJ387747; CAB62240.1;
-InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
                                                                             YAGILLGITNTFATIPGMIGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKG
                                                                                                                                                                                                                                                                                                                                                                                         121 ITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYP
                                                      AMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGLIW
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Last annotation update)
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86.3%; Pred. No. 8.5e-175;
11ve 39; Mismatches 29;
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01-MAY-2000 (
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Fu.C., Bardhan S., Cetateanu N.D., Lloyd S.R., Yan H., Carter C.E., Shi E., Venkov C., Yakes M.F., Page D.L., Hellarqvist C.G.;
"Identification of a novel membrane protein from mammalian cells that interacts with the anti-pathoangiogenic compound CM101."; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AF244577; ARF97765.1, SAF97765.1, SAF97765.1
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                                                                                                             AMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIW
                                                                                      FILMICLUSDIPETHKTITPYEKEYILSSLKNQLSSQKSVPWIPMLKSLPLWAIVVAHFS
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
NCBI_TaxID=9606;
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86.3%; Pred. No. 9.3e-175;
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481 EVQNWALNDHHGHRH 495
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Science 287:2185-2195(2000).
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RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Worthan J.R., Yandell M.D., Zhang Q., Chen L.X.,
Bradon R.C., Rogers Y.-H.C., Blazej R.G., Change M., Herderson S.N.,
RA Bardon R.C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Besson K.Y. Basu A., Baxendale J., Baytaktarollu L., Beasley B.M.,
RA Berlow R.M., Basu A., Baxendale J., Baytaktarollu L., Beasley B.M.,
RA Burtis K.C., Busam D.A., Bulter H., Cadleu E., Center A., Chandra I.,
RA Burtis K.C., Busam D.A., Bulter H., Cadleu E., Center A., Chandra I.,
RA Burtis K.D., Evangelista C.C., Ferraz C., Ferriera S., Fleischman W.,
RA Bablos B., Delcher A., Deng N., Dugan-Bocha S., Dunkov B.C.,
Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischman W.,
RA Batlis M., Gabriellan A.E., Garq N.S., Gelbart W., Glasser K.,
A Glodek A., Gong F., Gorrell J.H., Gu Z., Gelbart W., Glasser K.,
A Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
Jalali M., Kalush F., Karpen G. H., Ke Z., Kennison J.A., Ketchum K.A.,
Jalali M., Kalush F., Karpen G. H., Ke Z., Kennison J.A., Ketchum K.A.,
Jalali M., Kalush F., Karpen G. H., Ke Z., Kennison J.A., Ketchum K.A.,
Jalali M., Kalush F., Karpen G. H., Ke Z., Gebez J. R., Houck J.,
Jalali M., Kalush F., Karpen G. H., Ke Z., Kennison J.A., Ketchum K.A.,
Jalali M., Kalush R., McIntosh T.C., McLeod M.P., McPherson D.,
RA Mimel B.E., Kodira C.D., Kraft C., McLeod M.P., Mount S.M., Woodage T., Worley K.C., Wu D., Yung S., Wang K.,
Rabazzolo M., Pittmano G.S., Pan S., Pollard J., Wang S., Wang D.,
Rand S., Woodage T., Worley K.C., Wu D., Yang S., Zhu X., Smith H.,
Rand S., Woodage T., Worley K., Sung S., Zhu X., Zhu 
                                            401
                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Bukaryota, Metazoa, Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                              LCVRRIFSLIGMIGPAVFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPS
                                                                                                                                                   YNWIFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFST
                                                                                                                                   YAGILLGITNTFATIPGMIGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKG
                                                                        LWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPS
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01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
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MEDLINE-20196006; PubMed=10731132;
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522 EVQNWALNDHHGHRH 536
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SEQUENCE FROM N.A.
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Drosophila melanogaster (Fruit fly).
Bukaryota, Metazoa, Arthropoda, Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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MEDLINE=20196006; PubMed=10731132;
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Annanatides P.G., Scherer S.E., in P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
            SIMILARITY).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGP-IIARSLTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHN-----QTGKKYRWDAETQGWILGSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FGLLGILWFIAWMYLVYDKPSDHPRISESEREYIERSLQVQRLINQDLAEAEEEEGQDEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKNQ-------
                                                                                                                                                                                                                                                                                                                                                                            43;
                                                                                                                                                                                                                                                                                                                Length 559;
                                                                                                                                                                                                                                                                                                                                                                            Indels
-i- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY -i- SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY. EMBL; AE003491; AAF48230.1; -Flybase; Egn0030452; CG4330.
InterPro; IPR003662; sub_transporter.
PF00083; sugar_tr; 1.
                                                                                                                                                                                                                       8C48402881046C70 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                Query Match 37.9%; Score 991.5; DB 5; Best Local Similarity 39.5%; Pred. No. 9.9e-70; Matches 204; Conservative 89; Mismatches 181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          510 RETLIQWHLVFWLAAGLNIAGNFIYLIFASAEEOSWS 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENTIGEWOTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         502 AA
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                                                                                                                                                                                                                       559 AA; 61744 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAY-2000 (TrEMBLrel. 13, 01-DEC-2001 (TrEMBLrel. 19, CG4288 PROTEIN (GH23975P).
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               Abrilland R.C., Rogers Y. H.C., Andrews M., Pfeiffer B.D., RA Brandon R.C., Rogers Y. H.C., Blazej R.G., Champe M., Pfeiffer B.D., Ran Kn. K. Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfennkoch C., Baldwin D., Ballew R.M., Basu A., Baxendaled J., Bayraktaroglu L., Beasley E.M., Ballew R.W., Basnos P.V., Berman B.P., Bhandari D., Bolshakov S., R. Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Cherer A., Chandra I., Bartis K.C., Busam D.A., Buller H., Cadieu E., Center A., Chandra I., R. Gerber A., Dong Z., Mays A.D., Dew I., Dietz S.M., R. Doublo K.J., Evangelista C.C., Ferriaz C., Ferriara S., Pielschmann W., R. Doublo K.J., Evangelista C.C., Ferriaz C., Ferriara S., Fielschmann W., R. Hostin D., Houston K.A., Howland T.J., Mernandez J.R., Houck J., R. Houston K.A., Howland T.J., Hernandez J.R., Houck J., Karpel G.H., Ke Z., Kennison J.A., Ketchum K.A., Andtiel B.E., Kodia C.D., Kraft C., Kravitz S., Kulp D., Lai Z., Andrel B.E., Kodia C.D., Kraft C., McLeod M.P., Morberson D., Mortherson D., Mount S.M., Moy M., Murphy B., Murphy L., Muzry D.M., Nelson D.L., R. Alakov G., Milshina N.V., Mobarry C., Moris C., Scheeler F., Shan H., Shie B.C., Standing A., Sturk R. Shie B.C., Standing A., Sturk R. Shie B.C., Standing A.C., Standers R.D.C., Scheeler F., Shan H., Shie B.C., Siden K.A., Nixon K., Wonder Y. Duri V., Rese M.G., R. Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shan H., Shie B.C., Siden K.A., Woodage T., Worley K.C., Wun D., Yang S., Yao Q. A., R. Willsans S.M., Woodage T., Worley K.C., Wun D., Yang S., Yao Q. A., R. Willsans S.M., Woodage T., Worley K.C., Wun D., Yang S., Yao Q. A., R. A. Hang S.M., Woodage T., Worley K.C., Wun D., Yang S., Yao Q. A., The genome sequence of Brosophila melanogaster.";

R. Zhong X.H., Zhong F.W., Rubistock G.M., Weissenbach H., Weisen B., Reiner B.C., Zhong W., Woodage T., Worley E.W., Woodage T., Worley E.W., Schen J. S., Shift H.C., Schen B., Schen B., Schen B., Schen B., Schen B., Sc
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SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

STARAIN-Y, CN BW SP;
Stapleton M., Brokstein P., Hong L., Agbayani A., Carlson J.,
Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R.,
Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R.,
A Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C.J.,
Nunco J., Pacleb J., Paragas V., Park S., Phouanenavong S., Wan K.,
Yu C., Lewis S.E., Rubin G.M., Celniker S.;
L. Submitted (CCT-2001) to the EMBL/Genbank/DbbJ databases.

-1- SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY.

BEBL; AV060776; AAL28124.1; -
BEBL; AV060776; AAL28124.1; -
BRBL; ARGONS SECONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              173 IGEGVTYPAMHAMMSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYF 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54 YSLRVNLSVALVDMVDSNTT-AKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWIL 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113 GSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEG 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 VSDL-APSDGE-----EGSDRTPLLQRAPRAEPAPVCCSARYNLAFLSFFGFFVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53 YSLRVNLSVAIVAMTENRTVFDADGNVSYQ-------QDFPWDSKQKGLIL
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   Chen L.X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  460D6FD1DE741CE2 CRC64;
   Sutton G.G., Wortman J.R., Yandell M.D.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00083; sugar_tr; 1.
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412
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                                                                                                                                                             Eukaryota; Metazoa; Chórdata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBL_raxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYI 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91
                                                                                                                                      AIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYLGCWLCMILSGQAADNL
                                          FGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKNQLSSQKSVPWIPMLKSLPLW
                                                                      RARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSI
                                                                                                                                                                                                                                                    NHLDIAPSYAGILLGITNTFATIPGMIGPIIARSLTPENTIGEWQTVFCIAAAINVFGAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EKKODNRETIELTEDGKPLEVPEKKAPLCDCTCFGLPRRYIIAIMSGLGFCISFGIRCNL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36.9%; Score 965; DB 11; Length 582;
40.1%; Pred. No. 1.3e-67;
Live 88; Mismatches 172; Indels 3.
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01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
DIFFERENTATION-ASSOCIATED NA-DEPENDENT INORGANIC PHOSPHATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases.
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SEQUENCE 582 AA; 64575 MW; .99A14F62E685B9E9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       582 AA.
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01-0CT-2000 (TrEMBLrel. 15, Last sequ
01-0CT-2000 (TrEMBLrel. 15, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                473 FFTLFAKGEVQNWAISDHQ 491
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Mashima H., Kojima I.;
"Rat DNPI.";
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Best Local Similarity
Matches 197; Conserva
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476 LFAKGEVQNWA 486
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                                                                     435
                                61 SVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92 GVAIVDMVNNSTIHRGGKVIKEKA------KFNWDPETVGMIHGSFFWGYI 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 ITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYP 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AMHAMMSSWAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIW 240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             356 WNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHL 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32 EKKODNRETIELTEDGKPLEVPEKKAPLCDCTCFGLPRRYIIAIMSGLGFCISFGIRCNL 91
           WNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        377 QILSTTTVRKIMNCGGFGMEATLLLVVGY-SHTRGVAISFLVLAVGFSGFAISGFNVNHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DIAPSYAGILLGITNTFATIPGMIGPIIARSLTPENTIGEWOTVFCIAAAINVFGAIFFT
                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-21453279; PubMed-11432869;
Bai L., Xu H., Collins J.F., Ghishan F.K.;
"Molecular and functional analysis of a novel neuronal vesicular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88; Mismatches 172; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         glutamate transporter.";
J. Biol. Chem. 276:36764-36769(2001).
EMBL; AF324864; AAL08941.1; -.
SEQUENCE 582 AA; 64559 MW; 9F7A4F62E685A8AD CRC64;
                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 965; DB 11;
Pred. No. 1.3e-67;
                                                                                                                                                                                                                                          582 AA.
                                                                                                                                                                                                                                                                          Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36.9%;
40.1%;
                                                                                                                                                                                                                                                                     01-DEC-2001 (TrEMBLrel. 19, 01-DEC-2001 (TrEMBLrel. 19, 01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 197; Conservative
                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                      musculus (Mouse).
                                                                                                                                476 LFAKGEVONWA 486
                                                                                                                                                             496 LFASGEKOPWA 506
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                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                          Q920B7
            356
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86 HSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFA 145
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               266 ILSSL----KNQLSSQK--SVPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEVL 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282 IEESIGESANLLGAMEKFKTPWRKFFTSMPVYAIIVANFCRSWTFYLLLISQPAYFEEVF 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           381 AAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIG 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32 APVC-CSA----RYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAE 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       222 SYAGAVIAMPLAGILVQYIGWSSVFYVYGSFGWWYMFWLLVSYESPAKHPTITDEERRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                146 TAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           321 RFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLV
                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostom1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Aihara Y., Mashima H., Onda H., Hisano S., Kasuya H., Hori T., Yawada S., Tomura H., Yamada Y., Inoue I., Kojima I., Takeda J.; "Molecular cloning of a novel brain-type Na+-dependent inorganic phosphate cotransporter."; "Neurochem. 0:0-0(2000).

EMBL; AB032435; BAA928914.1; -CE761E56FA18C6AD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27;
                                                                                                                                                                                                             01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
DIFFERENTIATION-ASSOCIATED NA-DEPENDENT INORGANIC PHOSPHATE
                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36.8%; Score 962.5; DB 4; 41.4%; Pred. No. 2e-67; ive 85; Mismatches 161;
                                                                                                                                                              AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ŕ
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01-MAY-2000 (TrEMBLrel. 13, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 193; Conservative
                                                                                                                                                           PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=BRAIN THALAMUS;
496 LFASGEKQPWA 506
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RX Addams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

RA damstides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.E.,

Randarides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.E.,

RA demarides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.E.,

RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,

RA Brandon R.C., Rogers Y.-H.C., Blazel, R.G., Champe M., Pfelffer B.D.,

RA Ballew R.M., Basen A., Baxendale J., Bayraktaroglu L., Beasley E.M.,

RA Ballew R.M., Basen A., Baxendale J., Bayraktaroglu L., Beasley E.M.,

RA Ballew R.M., Basen B.P., Bhandari D., Bolshakov S.,

RA Borkova D., Borcham M.R., Buller H., Cadieu E., Center A., Chandra I.,

RA Burtis K.C., Busam D.A., Buller H., Cadieu E., Center A., Chandra I.,

RA Burtis K.C., Busam D.A., Buller H., Cadieu E., Center A., Chandra I.,

RA Burtis K.C., Busam D.A., Baller H., Cadieu E., Center A., Chandra I.,

RA Burtis M., Cawley S., Dahlke C., Davenport L.B., Davies P.,

RA Durbin K.J. Evangelista C.C., Ferraz C., Ferriac S., Fleischman W.,

RA Bartis M.L., Harvey D., Henhan T.J., Hernandez J.R., Houck J.,

RA Hartis N.L., Harvey D., Henhan T.J., Weil M.-H., Ibeyam C.,

Alali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A.,

RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A.,

Alali M., Matush F., Marnen B., Michen M.-H., Ibay D., Lai Z.,

Liu X., Mattei B., McIntosh T.C., Muzny D.M., Nelson D.L.,

RA Merkulov G. Milshina N.V., Mobarry C., Morris J., Wochrefi A.,

Rabazzolo M., Pittann G.S., Pan S., Pollard J., Parly W., Resee M.G.,

RA Spier E., Spradling A.C., Stapleton M., Strong K., Sunk X.,

Rabazzolo M., Pittann G.S., Pan S., Pollard J., Wang X.,

Rabazzolo M., Watsatman D.A., Weiller E., Wang A.,

Rabazzolo M., Pattanne S., Rabanders R.D.C., Scheeler F., Shen H.,

Rabazzolo M., Watsatman D.A., Weiller C., Wang S., Zhoo Q., Zhon G.,

RA Spier E., Spradling A.C., Stapleton M., Strong K., Wasatman D.A.,

Rabazzolo M., Watsatman D.A., Weiller E., Wang S., Plun W., Strong K.,

Raba
                                                                                                                 Drosophila-melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases.
--- SUBCELLUIAR LOCATION: INTEGRAL MEMBRANE PROTETN.
---- ALTERNATIVE PRODUCTS: TWO ISOPORMS; LONG ISOPORM (SHOWN HERE) AND SHORT ISOPORM; ARE PRODUCED BY ALTERNATIVE SPLICING.
     01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
PUTATIVE INORGANIC PHOSPHATE COTRANSPORTER (PICOT PROTEIN) (CG8098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transport; Transmembrane.
                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (LONG AND SHORT ISOFORMS).
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EMBL; AE003806; AAF57969.1; --
EMBL; AF022713; AAD09148.1; --
FlyBase; Fggn0024315; Picot.
InterPro; IPR003662; sub_transporter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 449-529 FROM N.A.
01-MAY-2000 (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science 287:2185-2195(2000).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57
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                                                                                                         PICOT OR CG8098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lage J.-L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alternative
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MPFRRSSLNHRHRDGHVLVWNQRNLHESLEQQPQR -> MS
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07B89A52D5081EFB CRC64;
                                                                                                                                                                                                                                                                                                                                                       82 -ECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLG 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                            141 FGIFATAIFTLETPLAA-DFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLL 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      376 AIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATI 435
                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                     23 LQRAPRAEPAPVCCSARYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSY- 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                     29 LEQOPOR----CFATRYFVTFMLFLGMANAYWMRTNMSVAIVAMVNHTAIKSGEAEEYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200 SISYAGAQLGTVVSLPLSGVICYY---ANWTYVFYFFGIVGIIWFILWICLVSDTPETHK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                257 TITPYEKEYILSSL-KNQLSSQKSVPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             || ||:|| || :| || 261 TIDEREKKYINDSLWGTDVVKSPPIPFKAIIKSLPFYAILFAHWGHNYGYETLMTELPTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    316 MKEVLRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        436 PGMIGPIIARSLTPENT---IGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNW 485
                                                                                                                                                 Length 529;
                                                                                                                                                 36.0%; Score 941; DB 5; Length 52 40.8%; Pred. No. 8.6e-66; ive 85; Mismatches 177; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BRISTOL N2;
Waterston R., Gattung S., Le T.T.;
"The sequence of C. elegans cosmid 2K54.";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996 (TrEMBLrel. 01, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 586 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-BRISTOL N2;
MEDLINE-99069613; PubMed-9851916;
                                                                          58372 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HYPOTHETICAL 65.0 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      investigating biology. The C. Science 282:2012-2018(1998).
                                                                                                                                                                           Best Local Similarity 40.8%
Matches 193; Conservative
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486
35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Caenorhabditis elegans.
                                                                          529 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. STRAIN=BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
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466
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                                                                          SEQUENCE
                                                                                                                                                         Query Match
                             VARSPLIC
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68 91 302

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422
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                                                                                                                                     129 VASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSS 188
                                                                                                                                                                137 ICQKFAANRVFGFAIVATSTLNMLIPSAARVHYGCVIFVRILQGLVEGVTYPACHGIWSK 196
                                                                                                                                                                                                                                                                                                                303 WTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLW 362
                                                                                                                                                                                                                                                                                                                                                                                            423 GILLGITNTFATIPGMIGPIIARSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEV 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                494
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                                                                                                                                                                                                                                                       SDTPETHKTITPYEKEYI-----LSSLKNQLSSQKSVPWIPMLKSLPLWAIVVAHFSYN
                                                                          DSNTTAKDNRTSYECAEHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGY
                                                                                                                                                                                                                                                                                                                                 30 EPAPVCCSA----RYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECA
                                  | :| |: : :| || :| || 34 ELSADGRPVTTQT--RDPPVVDCTCFGLPRYIIAIMSGLGFCISFGIRCNLGVAIVSMV
                                                                                                                                                                                              WAPPLERSKLLSISYAGAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLV
                                                                                                                                                                                                                                                                                                                                                                         363 VRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYA
                  ---RYNLAFLSFFGFFVLYSLRVNLSVALVDMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1996 (T-EMBLrel. 01, Last sequence update)
01-DEC-2001 (T-EMBLrel. 19, Last annotation update)
BRAIN SPECIFIC NA+-DEPENDENT INORGANIC PHOSPHATE COTRANSPORTER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostc
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDIATE-94261635; Dibmed-8202535; N. Madi N. S., Paul S.M.; Rosteck P. R., Nadi N.S., Paul S.M.; Cloning and expression of a cDNA encoding a brain-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35.4%; Score 927; DB 11;
39.4%; Pred. No. 1.2e-64;
iive 89; Mismatches 168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     560 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR003662; sub_transporter.
Pfam; PF00083; sugar_tr; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
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                 EEGSDRTPLLQRAPRAEPAPVCCSA--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Transmembrane.
SEQUENCE 560 AA;
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Matches 184; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             483 QNWA 486
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Best Local S
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6
                                                                                                                                                                                                                                                       145 RHVVAILALLGFANIYAMRANLSIAIVEMT-SGTERKVNGTT------LH-VLG 190
                                                                                                                                                                                                                                      KKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAAD 158
                                                                                                                                                                                                                                                                                                                                                        219 VICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKNQLSSQK 278
                                                                                                                                                                                                                                                                                                                                                                                      311 YLGEHFGWPMIFWFFGALGVIWCMVWYKTVHDRPEDDPKISTSE----LALLQRDAVSQN 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       394 AFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGPIIARSLTPENTI 453
                                                                                                                                                                                                                                                                                                                                                                                                                   279 S--VPWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPYL 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              337 GCWLCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYS---LAV 393
                                                                                                                                                 Gaps
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                                                                                                                                                                             RYNLAFLSFFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTG
                                                                                                                                                                                                                                                                                              159 FGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAGAQLGTVVSLPLSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aihara Y., Mashima H., Onda H., Hisano S., Kasuya H., Hori T.,
Yamada S., Tomura H., Yamada Y., Inoue I., Kojima I., Takeda J.;
"Molecular cloning of a novel brain-type Na+-dependent inorganic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30;
                                                                                                                                                 28;
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Last annotation update)
INORGANIC PHOSPHATE COTRANSPORTER.
                                                                                                                     Length 586;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35.6%; Score 932; DB 4; Length 56 39.5%; Pred. No. 4.7e-65; ive 92; Mismatches 171; Indels
                                                                                                                                                 Indels
       "Direct Submission.";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; U58737; AAK39396.1; -.
Hypothetical protein.
SEQUENCE 586 AA; 65045 WW; 95D52B7F7FA7DD0F CRC64;
                                                                                                                                                 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C88DAFB34B6E45B6
                                                                                                                   Score 936; DB 5;
Pred. No. 2.4e-65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                454 GEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWAISDH 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            543 GEWNVIMYIIISAYLLGAAIFWKFADATLQPWA-AEH 578
                                                                                                                                               82; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            phosphate cotransporter.";
J. Neurochem. 0:0-0(2000).
EMBL; AB032436; BA492875.1;--
SEQUENCE. 560 AA; 61613 MW;
                                                                                                                   35.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15,
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                                                                                                                                                 Conservative
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Best Local Similarity 39.5
Matches 191; Conservative
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                                                                                                                                 Similarity
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 Waterston R.;
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                                                                                                                                                 192;
                                                                                                                   Query Match
Best Local S
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Q9P2U7;
                                                                                                                                                 Matches
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          13 YIEDAIGESAKLMNPVTKFNTPWRRFFTSMPVYAIIVANFCRSWTFYLLLISQPAYFEEV 332
                                                                                                                                                                              333 FGFEISKVGLVSALPHLVWTIIVPIGGQIADFIRSRHIMSTINVRKLMNCGGFGMEATLL 392
                                                                                                                                                                                                                                                                                                                                                                                              Drosophila ananassae (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7217;
                                                                                                                                                                                                                     393 LVVGY-SHSKGVAISFLVLAVGFSGFAISGFNVNHLDIAPRYASILMGISNGVGTLSGMV 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59 AALQGYILSSFFYGYVITQIPFGILAKKYGSLRFLGYGMLINSVFAFLVPVAAREGGVWG 118
 EHSAPIKVLHNQTGKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIF 144
                                                                                205 GAQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKE 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         105 AETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAA-DFGVGA 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47 FFGFFVLYSLRVNLSVALVDMVDSNTTAKDNRTSY--ECAEHSAPIKVLHNQTGKKYRWD 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 FLGMANAYWRTHWSVAIVAMV-NHTAIKSGEEEYDDECGDRDIPID--DSQDG-EFPWN 58
                                        145 ATAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYA
                                                   YILSSLKNQLSSQKSV----PWIPMLKSLPLWAIVVAHFSYNWTFYTLLTLLPTYMKEV
                                                                                                                                                                  LRFNIQENGFLSAVPYLGCWLCMILSGQAADNLRARWNFSTLWVRVFSLIGMIGPAIFL
                                                                                           380 VAAGFIGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 483,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            81; Mismatches 164; Indels
                                                                                                                                                                                                                                                               440 GPIIARSLIPENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
6832750611B775F0 CRC64;
                                                                                                                                                                                                                                                                                                                                           01-Aug-1998 (TrEMBLrel. 07, Created)
01-Aug-1998 (TrEMBLrel. 07, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
PUTATIVE INORGANIC PHOSPHATE COTRANSPORTER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35.4%; Score 926; DB 5; 42.3%; Pred. No. 1.2e-64;
                                                                                                                                                                                                                                                                                                                         483
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Best Local Similarity 42.33
Matches 190; Conservative
                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
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383
420
483 AA;
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TRANSMEM
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96 QT------GKKYRWDAETQGWILGSFFYGYIITQIPGGYVASRSGGKLLLGFGIFA 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206 AQLGTVVSLPLSGVICYYMNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEY 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
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                                                                                                                          GFDGGWPSIFYVFGIVGTVWSIAFLIFVYEDPSTHPKIDEREKKYINESLWGTDVIKSPP
                                                                                                                                                                                                                         340 LCMILSGQAADNLRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTIS
                              ---MNWTYVFYFFGIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSL-KNQLSSQKS
                                                                                                                                                                                                                                                                                                                                                                                             400 TTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGPIIARSLTPENT---IGEW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      146 TAIFTLFTPLAADFGVGALVALRALEGLGEGVTYPAMHAMWSSWAPPLERSKLLSISYAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SAFGSPIILCVGGLISQALSWPFIFYIFGSTGCVCCLLWFTVIYDDPMHHPCISVREKEH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DJ139G21.1.2 (SODIUM PHOSPHATE SOLUTE CARRIER FAMILY 17 MEMBER (ISOFORM 2)) (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33.8%; Score 884; DB 4; Length 466; 38.7%; Pred. No. 2.2e-61; ive 91; Mismatches 176; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AL138726; CAC69102.1; -.
NON TER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 33.89
Best Local Similarity 38.79
Matches 179; Conservative
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NON_TER
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SVALVDMVDSNTTAKDNRTSYECAEHSAPIKVLHNQTGKK-----YRWDAETQGWILG 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SFFYGYIITQIPGGYVASRSGGKLLLGFGIFATAIFTLFTPLAADFGVGALVALRALEGL 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    176 AQVMVLTGQYSIWVKWAPPLERSQLTTIAGSGSMLGSFIVLLAGGLLCQTIGWPYVFYIF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GIVGIIWFILWICLVSDTPETHKTITPYEKEYILSSLKNQ-LSSQKSVPWIPMLKSLPLW 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          293 AIVVAHFSYNWTFYTLLTLLPTYMKEVLRFNIQENGFLSAVPY-LGCWLCMILSGQAADN 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        352 LRARWNFSTLWVRRVFSLIGMIGPAIFLVAAGFIGCDYSLAVAFLTISTTLGGFCSSGFS 411
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MKSPVSDLAPSDGEEGSDRTPLLQRAPRAEPAPVCCSARYNLAFLSFFGFFVLYSLRVNL 60
            385 IGCDYSLAVAFLTISTTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMIGPLIA
                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33.4%; Score 874.5; DB 4; Length 497; 37.4%; Pred. No. 1.3e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                               497 AA; 54055 MW; 5A5616AA52D4990D CRC64;
                                                                                           445 RSLTPENTIGEWQTVFCIAAAINVFGAIFFTLFAKGEVQNWA 486
                                                                                                          | :: |: || :: || :| || 417 GFLISQDFESGWRNVFFLSAAVNMFGLVFYLTFGQAELQDWA 458
                                                                                                                                                                                                     01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
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Q9Y2C5
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Search completed: July 15, 2002, 08:25:03 Job time: 168 sec

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170105 : AC007756 Drosophila melan 170939 : AC007757 Drosophila melan 221409 : AE003730 Drosophila melan 1587 : ARO25880 Homo sapiens CDNA: 2178 : AF095787 Caenorhabditis ele

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17 rAspArgThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProV 34
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Ratio: 5.287
Percent Similarity: 100.000
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US-09-776-865-4 x AF244578
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gb_in:AC007756
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gb_in:AE003730
gb_pr:AK025880
gb_in:AF095787
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DEFINITION
ACCESSION
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KEYWORDS
SOURCE
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1 AB032436 Homo sapiens BNP1 mRN

1 140028 Sequence 1 from patent

1 140220 Sequence 3 from patent

1 140221 Sequence 3 from patent

1 140221 Sequence 3 from patent

1 173260 Sequence 3 from patent

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i AX207626 Sequence 3 from Paten
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i AJ387747 Homo sapiens mRNA for
i AX207624 Sequence 1 from Paten
i AF244577 Homo sapiens membrane
i BC020951 Homo sapiens, solute
i AY060776 Drosophila melanogast
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13 1 AC023711 Drosophila melanoga

14 1 AE003491 Drosophila melanoga

15 1 AF32464 Mus musculus vesicula

16 AF31235 Rattus norvegicus dif

16 AE0032435 Homo sapiens DNP mRN

16 AE00501 Drosophila melanogast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 i 219153 Caenorhabditis elegans
BC018306 Mus musculus, Similar
AB020527 Homo sapiens mRNA for
AR024903 Homo sapiens cDNA: FI
AR0249077 Drosophila melanogast
AC014600 Drosophila melanogast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l AC013869 Drosophila melanogas
! AC020252 Drosophila melanogas
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       out_format : pfs
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7.8e-196
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.1e-62
.4e-62
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Fu.C., Bardhan, S., Cetateanu, N.D., Lloyd, S.R., Yan, H.-P.,
Carter, C.E., Shi, E., Venkov, C., Yakes, M.F., Page, D.L. and H.C.G.
Carter, C.E., Shi, E., Venkov, C., Yakes, M.F., Page, D.L. and H.C.G.
Identification of a novel membrane protein from mammalian cells
that interact with the anti-pathoangiogenic compound CM101
Unpublished
2 (bases 1 to 284)
Fu.C., Bardhan, S., Cetateanu, N.D., Lloyd, S.R. and Hellerqvist, C.G.
Direct Submission
Submitted (13-MAR-2000) Biochemistry, Vanderbilt University, Scool
of Medicine, 23rd@Pierce, Nashville, TN 37232-0146, USA
                                                                                                                                                                                                                                      Ovis aries
Sukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="similar to Na+ inorganic phosphate transporter"
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Ovis sp.

Ovis sp.

Ovis sp.

Divaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Cetartiodactyla; Ruminantla; Pecora; Bovoidea;

Bovidae; Caprinae; Ovis.

(CE 1 (bases 1 to 2844)

3.85 Methods for preventing or attenuating pathoangiogenic conditions by using the gas-toxin (cm101) receptor as a vaccine

VANDERBILT UNIVERSITY (US)

VANDERBILT UNIVERSITY (US)

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_ld="Cac60359.1"
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                                                                                                                                                                                                                                                                                                               1234 TIATAGGCTGTGATTATTCCTTGGCTGTTGCATTCCTAACCATATCAACA 1283
                                                                                                                                                                                                                                                                                                                                                                       1334 TGCTCCTTCGTATGCTGGTATTCTCCTGGGCATCACAAATACCTTTGCCA 1383
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1034 GGAAGTCCTAAGGTTCAATATTCAAGAGAATGGGTTTTTATCTGCAGTCC 1083
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                                                                                                                                                                                                                             1434 AACACTATTGGAGAAAGGCAAACTGTTTTCTGCATCGCTGCTGCTTGAA 1483
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                                        roTyrLeuGlyCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAsp
                                                                                                                                           1134 AATTTAAGGGCAAGATGGAATTTTTCAACTCTGTGGGTTCGAAGAGTTTT
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VERSION
KEYWORDS
SOURCE
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TITLE
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SA 634 9 882 t
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Gaps: 0
Identity: 100.000
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                                                                                                                                                   Quality: 2617.00
Ratio: 5.287
Percent Similarity: 100.000
                                                                                                                                                                                                                                                to: AX207626
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US-09-776-865-4 x AX207626
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                                                      ThrProGluThrHisLysThrIleThrProTyrGluLysGluTyrIleLe
                                                                                                                        uSerSerLeuLysAsnGlnLeuSerSerGlnLysSerValProTrpIleP
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Patent EP1069184
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LOCUS AX138494
DEFINITION Sequence 2 from
ACCESSION AX138494
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laMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuSer

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Homo sapiens
Sukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 2512)
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Percent Identity:
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Patent: EP 1069184-A 2 17-JAN-2001;
Akzo Nobel N.V. (NL)
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585 c 566 g 749
                                                                                                                                                             Location/Qualifiers
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    GI:14274389
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ORIGIN
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KEYWORDS
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NTVGEWQTYFYIAAAINVFGAIFFTLAKGEVQNWALNDHHGHRH"
                                                                                                                                                                                                                                                         Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 2512)
Verheljen, F.W., Verbeek, E., Aula, N., Beerens, C.E., Havelaar, A.C.,
JOOSSE, M., Peltonen, L., Aula, P., Galjaard, H., van der Spek, P.J. and
Mancini, G.M.
                                                                                                                                                 PRI 10-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (03-JUN-1999) F.W. Verheijen, Erasmus University, Dept.
Clinical Genetics, P.O. Box 1738, 3000 DR Rotterdam, NETHERLANDS
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                          mutated in sialic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      271 ATGAGGTCTCCGGTTCGAGACCTGGCCCGGAACGATGGCGAGGAGAGCAC 320
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                                                                                                                                                 linear
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                                                                                                                                                                                                                                                                                                                                                                                                                   A new gene, encoding an anion transporter, is acid storage diseases
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Gaps: 0
Percent Identity: 86.263
                                                                                                                                                   mRNA
                      1721 ACTGGGCTCTCAATGATCACCATGGACACAGACAC 1755
snTrpAlaIleSerAspHisGlnGlyHisArgAsn 495
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .2512
/organism="Homo sapiens"
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271. .1758
                                                                                                                                               2512 bp
                                                                                                                                                                Homo sapiens mRNA for sialin.
AJ387747
AJ387747.1 GI:6562532
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Verheijen, F.W.
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Ratio: 4.903
Percent Similarity: 95.960
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LOCUS HSA387747
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AUTHORS
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JOURNAL
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SOURCE
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                                                                                                                                                                                                             67 tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA
                                                        84 laGluHisSerAlaProIleLysValLeuHisAsnGlnThrGlyLysLys
                                                                                                                 LeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuValAlaLe
                                                                                                                                                                                                                                                                                                                                                           721 CTGTTCACTCCCATTGCTGCAGATTTAGGAGTTGGACCACTCATTGTACT
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                                                                                                                                                       TyrArgTrpAspAlaGluThrGlnGlyTrpIleLeuGlySerPhePheTy
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Quality: 2329.00
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US-09-776-865-4 x AX207624
                                                                                                                           Percent Similarity:
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FSINHLDIAPSYAGILLGITWTFATFGMYGPVIAKSLTPDNTVGEWQTVFYIAAAIN
VFGAIFFTLFAKGEYQWMALNDHGHRH"
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 2930)
Hellerqvist, C.G.
Methods for preventing or attenuating pathoangiogenic conditions busing the 9bs-toxin (can101) receptor as a vaccine
Patent: WO 0156598-A 1 09-AUG-2001;
VANDERBLIT UNIVERSITY (US)
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                   AATTTAAGGGCAAAATGGAATTTTTCAACTTTATGTGTTCGCAGAATTTT 1370
                                                                               1421 TCATTGGCTGTGATTATTCTTTGGCCGTTGCTTTCCTAACTATATCAACA 1470
                                                                                                                                                                                                                                                     1471 ACACTGGGAGGCTTTTGCTCTTCTGGATTTAGCATCAACCATCTGGATAT 1520
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                                                                                                                                             helleGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerThr 400
                                                                                                                                                                                                                               ThrLeuGlyGlyPheCysSerSerGlyPheSerIleAsnHisLeuAspIl 417
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AX207624.1 GI:15422329

    2930
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Location/Qualifiers
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 Gaps: 0
Percent Identity: 86.263
4.903
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IGIFWFLLWIWLVSDTPQKHKRISHYEKEYILSSLRNQLSSQKSVPWVPILKSLPLWA
IVVAHFSYNWTFYTLTLLPTYMKEILRFNVQENGFLSSLPYLGSWLCMILSGQAADN
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VFGAIFFTLFAKGEVQWMALNHHGHH"

698 c 681 g 822 t
                                                                                                          Unpublished
2 (bases 1 to 2930)
Fu.C. Bardhan, S., Cetateanu, N.D., Lloyd, S.R. and Hellerqvist, C.G.
Fu.C. Submission
Submitted (13-MAR-2000) Blochemistry, Vanderbilt University, Scool
of Medicine, 23rd@pierce, Nashville, TN 37232-0146, USA
                                                                                                                                                                                                                                                                         1. .2930
/organism="Homo sapiens"
/db_xref="taxon:9606"
/gene="HF59"
263. 1873
/gene="RP59"
/note="similar to Na+ inorganic phosphate transporter"
                                                                 Identification of a novel membrane protein from mammalian of that interacts with the anti-pathoangiogenic compound CM101
Fu.C., Bardhan,S., Cetateanu,N.D., Lloyd,S.R., Yan,H.-P.,
Carter,C.E., Shi,E., Venkov,C., Yakes,M.F., Page,D.L. and
Hellerqvist,C.G.
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Gaps: 0
Percent Identity: 86.263
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Ratio: 4.903
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                                                                                                                                                               AUTHORS
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    AUTHORS
                                                                                                                 JOURNAL
                                                                                                                                       REFERENCE
                                                                                                                                                                                                             JOURNAL
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                 1286 TACAACTGGACTTTTTATACTTTATTGACATTATTGCCTACTTATATGAA 1335
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                                                                                                                                                                                    roMetLeuLysSerLeuProLeuTrpAlaIleValValAlaHisPheSer 300
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                            1486 TAGCCTTATAGGAATGATTGGACCTGCAGTATTCCTGGTAGCTGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      451 AsnThrIleGlyGluTrpGlnThrValPheCysIleAlaAlaAlaIleAs
                                                                                                                                                                                                                                                                           301 TyrAsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                334 roTyrLeuGlyCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAsp
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                                                                                         uSerSerLeuLysAsnGlnLeuSerSerGlnLysSerValProTrpIleP
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                               386 ATGAGGTCTCCGGTTCGAGACCTGGCCCGGAACGATGGCGAGGAGGACAC 435
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                                                                                                                                           51 PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe
                                                                                                                                                                                                                                                      67 tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA
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1035
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134 lyGlyLysLeuLeuGlyPheGlyIlePheAlaThrAlaIlePheThr 150
                                                                                                                 LeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuValAlaLe 167
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                                         rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG
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Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov Series: IRAR Plate: 20 Row: i Column: 2 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 6912665. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94305
Web site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear PRI 22-JAN-2002
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Homo sapiens, solute carrier family 17 (anion/sugar transporter), member 5, clone MGC:8885 IMAGE:3847279, mRNA, complete cds.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 3329)
Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (03-JAN-2002) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
R. M.
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/product="solute carrier family 17 (anion/sugar
                                                                                                                                                                                                                                                                            1786 TGTTTTGGTGCCATTTTCTTTACACTATTCGCCAAAGGTGAAGTACAAA 1835
.586 ACACTGGGAGGCTTTTGCTCTTCTGGATTTAGCATCAACCATCTGGATAT 1635
                                                                                                                                             467
                                                                                                                                                                                                                                                                                                                                                    nValPheGlyAlaIlePhePheThrLeuPheAlaLysGlyGluValGlnA 484
                                           AsnThrIleGlyGluTrpGlnThrValPheCysIleAlaAlaAlaIleAs
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/clone_lib="NIH_MGC_65"
/lab_host="DH10B"
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/db_xref="Locas10:26503"
/db_xref="taxon:9606"
/clone="MGC:8885 IMAGE:3847279"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1836 ACTGGGCTCTCAATGATCACCATGGACACAGACAC 1870
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125, .1612
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Tissue Procurement: ATCC
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NYUGRWQTVFYIAAAIVFAIFFTLEAKGEVQNWALNDHHGHRH"
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                                                                                                                                                                                                                                                      Length: 495
Gaps: 0
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transporter), member 5"
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Ratio: 4.903
Percent Similarity: 95.960
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us-09-776-865-4.p2n.rge

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2.730
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                                 985.50
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                                                                                        Percent Similarity:
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                                                                Ratio:
      alignment_scores
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This clone was sequenced as part of a high-throughput process to relate clones from Drosophila Gene Collection 1 (Rubin et al., sequence clones from Drosophila Gene Collection 1 (Rubin et al., for sequence accuracy, presence of a polyA tail and contiguity within 100 kb in the genome. Thus we believe the sequence to reflect accurately this particular CDNA clone. However, there are artifacts associated with the generation of CDNA clones that may have not been detected in our initial analyses such as internal priming, priming from contaminating genomic DNA, retained introns due to reverse transcription of unspliced precursor RNAs, and reverse transcription of unspliced precursor RNAs, and reverse transcription about this sequence, including its location and relationship to other sequences, please visit our Web site (Attp://fruitfly.berkeley.edu.) or send email to condeficitiers
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AIMASHFSENWGFYTLLTQLPSFLRDTLNFDLGKTGILSAVPYLAMGILLAVSGYLAD
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LYGGVIYWFYCSGDLGWAAKTPGKAQEAEEKAQLQLTQTAGFVNSGAELKD"
495 c 479 g 475 L
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VTFPGIHAVWARWSPPLERSRWASIAFAGNYAGTVVAMPCSGFLATKYGWESVFYVFG
                                                                                        INV 08-NOV-2001
                                                                                                                                                                                                                                                           Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 1841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (30-OCT-2001) Berkeley Drosophila Genome Project, Lawrence Berkeley National Laboratory, One Cyclotron Road, Berkeley, CA 94720, USA.
Sequence submitted by:
Berkeley Drosophila Genome Project
Lawrence Berkeley National Laboratory
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/db_xref="FLYBASE:FBgn0038799"
133. 1641
                                                                      Drosophila melanogaster GH23975 full length cDNA. AX060776
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/organism="Drosophila melanogaster"
/strain="y; cn bw sp"
/db_xref="taxon:7227"
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                                                       seg_name: gb_in:AY060776
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SOURCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243 LeuTrplleCysLeuValSerAspThrProGluThrHisLysThrIleTh 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133 ATGACCGACCTGGAGTCTCCGAAGAACGGCAAGCACCTGGAGCAGGTGCA 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60 uSerValAlaLeuValAspMetValAspSerAsnThr...AlaLysA 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..........GluGlySerAspArgThrProLeuLeuGlnArgAlaP
                                                                                                                                                                                                                                                                                                                                   183 CCAAAACAACAATGAAATCACGGAGAGTGAACCACTCACCTGGCGATTTT
                                                                                                                                                                                                                                                                                                                                                                                 27 roArgAlaGluProAlaProValCysCysSerAlaArgTyrAsnLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76 spAsnArgThrSerTyrGluCysAlaGluHisSerAlaProIleLysVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93 LeuHisAsnGlnThrGlyLysLysTyrArgTrpAspAlaGluThrGlnGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       126 lyGlyTyrValAlaSerArgSerGlyGlyLysLeuLeuLeuGlyPheGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      461 GTGGCTACATCGGCACCAAAATTGGTGGCAACATTGTATTTGGTACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   159 eGlyValGlyAlaLeuValAlaLeuArgAlaLeuGluGlyLeuGlyGluG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        561 CAGCTTGGAAATGTTCCTGTTCGCCCATCATCGAGGGCTTCTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                611 GCGTCACCTTCCCCGGTATTCATGCGGTCTGGGCCCGCTGGTCTCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              193 LeuGluArgSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661 TIGGAACGATCCCGAATGCCATCGATAGCCATTTGCCGCCAACTATGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              226 rpThrTyrValPheTyrPhePheGlyIleValGlyIleIleTrpPheIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       761 GGGAGAGCGTATTCTACGTATTCGGCACCATCGGCGTGATCTGGTACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44 PheLeuSerPhePheGlyPhePheValLeuTyrSerLeuArgValAsnLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               359 AIGGAAAIGICCTACCAG.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length: 499
Gaps: 6
Percent Identity: 39.078
                                                                                                                                                          to: 1841
                                                                                                                                                                                                    5 ValSerAspLeu...AlaProSerAspGlyGlu
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TITLE Direct Submission JOURNAL Submitted (16-NOV-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA COMMENT This sequence was identified as CDM:10212070 by the submitter. * NOTE: This is a 'working draft' sequence e-mail to fly@celera.com. * NOTE: This is a 'working draft' sequence. * This sequence will be replaced * by the finished sequence as soon as it is available and * the accession number will be preserved.  * EATURES Location/Qualifiers Source //db_xref="taxon:7227" BASE COUNT 9162 a 7329 c 7079 g 9874 t	nt_scores:     Quality: 981.50    Le     Ratio: 2.853 It Similarity: 66.538    Percent Iden nt_block: 776-865-4 x AC014246	Align seg 1/1 to: AC014246 from: 1 to: 33444  3 SerProValSerAspleuAlaProSerAspGlyGluGluGlySerAspAr 19	5950CGTCGATTTTGGGGTTCCTGGGGTTCGCCGTG 5991 53 LeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspWetValAs 69 592 GTTACGCGGTCAATCTGTCGGTGCCATTGTGGCCATTGTGGCCATGTGTG. 6039 69 pSerAsnThrAlaLysAspAsnArgThrSerTyrGluCysAlaGluH 86	ACCGGCACCA ysTyrArgTr ::::: AGTTTGTGTG TyrGlyTyrI 	129 alAlaSerArgSerGlyGlyLysLeuLeuGlyPheGlyIlePheAla 145 ::   ::   :::            6236 TGGCCGGCTGTATGCTGGGAAGATCTACGGCTATGGACTGTTGATC 6285  146 ThrAlaIlePheThrLeuPheThrProLeuAlaAlaAspPheGlyValGl 162      ::          ::
259 rProfyrGluLysGluTyrlleLeuSerSerLeuLysAsnGlnLeuSerS 276  11 :::       :::         861 GAAGGAGATGCGACTACCAGAGGCATCTGGGTTCTA 910  276 erGlnLysSerValProTrplleProMetLeuLysSerLeuProLeuTrp 292  ::::::		359 TThrLeuTrpValArgArgValPheSerLeuIleGlyMet11eGlyProA 376  316 14	409 yPhoSerIleAsnHisLeuAspIleAlaProSerTyralaGlyIleLeuL 426     :::::	459 lPheCysIleAlaAlaIleAsnValPheClyAlaIlePhePheThrL 476 :	seq_documentation_block:  AC014246  AC014246  Definition_block.  AC014246  Definition_block.  ACCESSION  ACCESSION  AC014246.  ACCESSION  AC014246.  AC014246.  ACCESSION  AC014246.  ACCESSION  AC014246.  ACCESSION  AC014246.  ACCESSION  ACO14246.  ACCESSION  ACCESSION  ACCESSION  ACCESSION  ACCESSION  ACCESSION  ACCESSION  ACCESSION  ACCOSSION  ACCOSSION  ACCOSSION  ACCOSSION  ACCESSION  ACCOSSION  ACCOSSION  ACCESSION  ACCOSSION  ACCOSSION  ACCESSION  ACCOSSION  ACCESSION  ACCES

6386	ATCCAGCTATGCACGCCATGCTTGCCCACTGGATACCGCCGCTGGAGAGG	6435
196	SerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGlyThrValVa :::   :::::::         :: AACAAGTTCGCCGCAATCGTATGCGGCCTCCAATATGGGAACAGTCAT	212 6485
21	SerLeuProLeuSerGlyVal	26
æ	TTCCATGCCGCTGGCCGGATGGCTGTGCTCGCTGGACTTCCTGGGTG	2
226 6536	rpThrTyrValPheTyrPhePheGlyIleValGlyIleIleTrpPheIle   :::       :::	242 6585
243 6586	LeuTrpIleCysLeuValSerAspThrProGluThrHisLysThrIleTh	259 6635
259	rProTyrGluLysGluTyrIleLeuSerSerLeuLysAsnGln	273
27		5 6
9899	TAAATCAGGATCTAGCGGAGGCCGAGGAAGAGGAGGACGACAGGATGAAGT	6735
274	LeuSerSerGlnLysSerValProTrplleProMetLeuLy ::::::::::::::::::::::::::::::::::::	287 6785
287 6786		304 6835
304 6836	hrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetLysGluValLeu::	320 6885
321	ArgPheAsnIleGlnGluAsnGlyPheLeuSerAlaValProTyrLeuGl:::    :::	337 6935
337 6936	yCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAspAsnLeuArgA	354 6985
354 6986	laArgTrpAsnPheSerThrLeuTrpValArgArgValPheSerLeuIle        :::            ::::::::::::::::	370 7035
371 7036	GlyMetIleGlyProAlaIlePheLeuValAlaAlaGlyPheIleGlyCy :::	387 7085
387 7086	SASPTYTSETLEUAlaValalaPheLeuThrIleSetThrThtLeuGlyG	404 7135
404	1yPheCysSerSerGlyPheSerIleAsnHisLeuAspIleAlaProSer    :::   ::::	420 7185
421 7186	TyralaclyileLeuLeuGlyileThrasnThrPheAlaThrileProGl             :::                  TATGCAGCACCATGTATGCCATCACCAATTCGCGCAAATATCTGTGG	437 7235
437	yMetlleGlyProIlellealaargSerLeuThrProGluasnThrI  :::::::    :::   :::  CTTCCTGGCTGCGTATGTCATCATCATCATCATGGGGAGCTC	453 7285
453 7286	leGlyGluTrpGlnThrValPheCys1leAlaAlaAlaIleAsnValPhe:::::        :::       :::  :::    ::::	469 7335

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Disappina metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pteryota; Metazoa; Arthropoda; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

I (bases 1 to 167928)

Muzny, D. Scherer, S., Adams, M.D., Holt, R.A., Evans, C.A., Gocayne, J.D., Tabor, P., Williamson, A., Homsi, F.H.,

Dugan-Rocha, S.D., Sodergren, E.S., Hodson, H., Chen, R.C.,

Ayele, M.A., Scott, G.S., Worley, K.W., Amamatides, P.G., Brandon, R.C.,

Rogers, Y., An, H., Baldwin, D., Beeson, K.Y., Brown, M., Buhay, C.,

Busam, D.A., Center, A., Chen, G., Chen, Z., Clerc-Blankenburg, K.,

Davenport, L.B., Dietz, S.M., Ding, Y., Dodson, K., Doup, L.E.,

Draper, H., Emery-Cohen, A., Ferriera, S., Garg, N.D.S., Houck, J.,

Liu, W., Mattei, B., McIntosh, T.C., Morgan, M., Moy, M., Murphy, B.,

Nelson, K.A., Nadssa, Y., Nguyen, N., Perter, L., Pittnan, G.S., Puri, V.,

Scheeler, F., Shen, H., Strong, R., Tector, C., Wang, Q., Williams, S.M.,

Xiang, J., Zaveri, J.S., Zhou, J., Zorrilla, S., Smith, H.O.,

Mheeler, D., Weinstcock, G., Gibbs, R. and Venter, J.C.

Direct Submission
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Norley K.C.

Direct Submission

AL Submitted (17 FEB-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA

Submitted (17 FEB-2000) Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA

Salbaroks, S.L., Adams, C., Adio-Oduola, B., Ali-Osman, F.R., Allen, C., Alabrocks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Bantenburg, K., Bonnin, N., Buhay, C., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Cartor, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Chen, S., Ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC023685
Drosophila melanogaster 3L BAC RP98-20N12 (Roswell Park Cancer
Institute Drosophila BAC Library) complete sequence.
                                                  470 GlyAlaIlePhePheThrLeuPheAlaLysGlyGluValGlnAsnTrpAl 486
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AC023685.3 GI:17223100
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AUTHORS
TITLE
JOURNAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
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Nguyen, A., Nguyen, N., Nguyen, N., Nickerson, E., Nwokenkwo, S., Oguh, M., Okwuonu, G., Oragunye, N., Oviedo, R., Pace, A., Payton, B., Peery, J., Peters, L., Pickens, R., Primus, E., Pul.L., Quiles, M., Ren, Y., Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Ruiz, S., Savery, G., Scherer, S., Scott, G., Shen, H., Shooshtari, N., Sisson, I., Sodergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H., Sutton, A., Yavaek, A., Tabor, P., Tamerisa, A., Tamerisa, R., Tang, H., Tansey, J., Taylor, C., Taylor, T., Telfrod, B., Thomas, N., Thomas, S., Usmani, K., Vasquez, L., Vera, V., Villalor, D., Vinson, R., Wall, R., Wang, S., Ward-Moore, S., Warren, R., Washington, C., Walliams, G., Williamson, A., Walczyk, R., Wooden, S., Weinstock, G. and Gibbs, R., Zhou, J., Zorrilla, S., Nelson, D., Direct, Submission

Submitted (01-DEC-2001) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA (bases 1 to 167928)

TITLE JOURNAL

REFERENCE AUTHORS

A (Dases I to 16/92)

8 Worley K. C., Addman.C., Adio-Oduola, B., All-Osman, F. R., Allen, C., Are, J. R., Banks, T., Barbaria, J., Bentcon, J., Bingage, K. Blankenburg, K., Bondin, D., Bouck, J., Bentcon, J., Bingage, K. Blankenburg, K., Bondin, D., Bouck, J., Bentcon, J., Bingage, K., Blankenburg, K., Bounin, D., Bouck, J., Bentcon, J., Bingage, K., Blankenburg, K., Brown, M., Bryant, N. P., Bluby, C., Burch, B., Burkett, C., Burrell, K. L., Byrd, M.C., Carron, T. F., Chen, R., Chen, R., Chen, G., Chen, R., Chen, R., Chen, R., Chen, G., Chen, R., Chen, R., Chen, G., Chen, R., Chen, R., Chen, G., Chen, R., C

TITLE JOURNAL

REFERENCE AUTHORS

Elhaj,C., Escotto,M., Falls,T., Ferraguto,D., Flagg,N., Ford,J., Gaveter,P., Gavera,N., Gall,R., Garell,J.,H. Gavera,W., Garcia,A., Garell,J.,H. Gavera,W., Garell,P., Hate,S., Hamilton,K., Harris,C., Harris,K., Hart,M., Havlak,P., Hawes,A., Hollins,B., Hannandez,O., Hodgson,A., Hogues,M., Holloway,C., Hollins,B., Homes,F., Howerd,S., Huber,J., Hulyk,S., Hume,J., Jackson,L.E., Jacobson,B., Jaia,Y., Johnson,R., Johlvet,S., Joudah,S., Karlsson,E., Kelly,S., Khan,U., King,L., Korvah,J., Kovar,C., Krattovic,J., Kureshi,A., Landry,N., Leal,B., Lewis,L., Li,J., Li,J., Li,J., Li,J., Li,J., Martindale,A., Martinez,E., Massey,E., Mawhiney,E., Mcleof,M.P., Martinez,R., Martindale,A., Martinez,E., Massey,E., Mawhiney,E., Mitchell,T., Mohabbat,R., Mei,G., Metzker,M., Miner,G., Miner,G., Mitchell,T., Mohabbat,R., Muygen,A., Nguyen,A., Nguyen,A., Nguyen,A., Nguyen,A., Nguyen,A., Nguyen,A., Nguyen,A., Peters,L., Pickens,R., Pace,A., Paylon,B., Peters,L., Peters,L., Pickens,R., Parimus,E., Pu,L.L.,Quiles,M., Ren,Y., Staner,Y., Savery,G., Scherer,S., Scott,G., Shen,H., Shooshtari,N., Stone,H., Sutton,A., Stale,R., Tamerisa,A., Tang,H., Tansey,J., Taylor,C., Taylor,T., Telfrod,B., Thomas,N., Thomas,S., Usman,R., Natren,R., Washington,C., Watlinams,G., Williams,G., Williamson,A., Wleczyk,R., Wooden,S., Watley,C., Watlinams,G., Williamson,A., Wleczyk,R., Wooden,S., Watley,C., Watlinams,G., Williams,G., Williams,G., Williams,G., Williams,G., Williams,G., Williams,G., Walle,C., Mayler,G., Sabartment of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, Tx 77030, USB, Staney,F., R., Manna,C., Mayler,G., Mayler,G., Adams,C., Adam

JOURNAL TITLE

REFERENCE AUTHORS

Worley, K.C., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Bankooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Bankooks, S.L., Amaratunge, H.C., Are, J.R., Banks, T., Barbaria, J., Bomen, S., Biewo, M., Bryant, N. P., Buhay, C., Borievs, M., Bryant, N. P., Buhay, C., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Cayle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Davy, Carroll, L., Dederich, D.A., Delaney, K.R., Delgado, O., Dany-Carroll, L., Dederich, D.A., Douthwaite, K.J., Davis, C., Davy, Carroll, L., David, R., Douthwaite, K.J., Davis, C., Dugan-Rocha, S., Dinhi, M.H., Douthwaite, K.J., Davis, C., Edvards, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantar, P., Gabis, A., Garner, T., Garza, N., Gall, R., Gorrell, J.H., Gaevara, W., Gunaratne, P., Habe, S., Hamilton, K., Harris, C., Harris, K., Hart, M., Havlak, P., Hawes, A., Jackson, E., Jacobson, B., Homsi, F., Howard, S., Huber, J., Hulyk, S., Hume, J., Jackson, E., Jacobson, B., Jak, Y., Johnson, R., Jollionay, L., Korvah, J., Lozado, R.J., Lu, X., Lucier, A., Ludier, R., Luna, R., Martinez, E., Marsey, E., Martinez, B., Martinez, E., Marsey, E., Martinez, E., Marsey, E., Martinez, E., Marsey, E., Martinez, P., Martinez, Ouiles, M., Ren, Y., Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Ruis, S., Savery, G., Scherer, S., Socht, G., Shen, H., Shooshtari, N., Sisson, I., Sodergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H., Sutton, A., Svatek, A., Tabor, P., Tamerisa, A., Tamerisa, K.,

alignment\_scores:

Percent Identity: 38.685 981.50 2.853 66.538 Quality: Percent Similarity: Ratio:

alignment\_block:

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                                                                                                                                                                                                                                                                                                                                                                                                                  149806 .... AACCAAACGGCAATTCCGCACAGCAACTCGTGATTGATACGG 149851
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alAlaSerArgSerGlyGlyLysLeuLeuLeuGlyPheGlyIlePheAla 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                yrProAlaMetHisAlaMetTrpSerSerTrpAlaProProLeuGluArg 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           212 lSerLeuProLeuSerGlyValIleCys.....TyrTyrMetAsnT 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  243 LeuTrpIleCysLeuValSerAspThrProGluThrHisLysThrIleTh 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36 ysSerAlaArgTyrAsnLeuAlaPheLeuSerPhePheGlyPhePheVal 52
                                                                                                                                                                                                                                                                                                    53 LeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMetValAs 69
                                                                                                                                                                                                                                                                                                                                                                            69 pSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysAlaGluH 86
                                                                        SerProValSerAspLeuAlaProSerAspGlyGluGluGlySerAspAr 19
                                                                                                                                                     gThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProValCysC 36
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                                       from: 1
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US-09-776-865-4 x AC023685
                                                                                                                                                                                      149712 GACG.....
                                     Align seg 1/1
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AC023711 174163 bp DNA linear INV 19-DEC-2001 Drosophila melanogaster 3 BAC RP98-6C4 (Roswell Park Cancer Institute Drosophila BAC Library) complete sequence.
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Pterygota, Neoptera, Endopterygota, Diptera, Brachycera,
Muscomorpha, Ephydroidea, Drosophilidae, Drosophila.
50452 TAAATCAGGATCTAGCGGAGGCCGAGGAAGAGGAGGGACAGGATGAAGTG 150501
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                                                                                                                                                                                                                                                                                                                                                                    150652 CACTTTGACATCCAGTCGAATGCTCTGCTCAATGCGGTGCCGTATCTAAC
                                                ......beuSerSerGlnLysSerValProTrpIleProMetLeuLy
                                                                                                AGTCTGCGGGCGCCGCGGAGGAACCGATACCCTGGTCATCGCTGCTCAC
                                                                                                                                                   sSerLeuProLeuTrpAlaIleValValAlaHisPheSerTyrAsnTrpT
                                                                                                                                                                             321 ArgPheAsnIleGlnGluAsnGlyPheLeuSerAlaValProTyrLeuGl
                                                                                                                                                                                                                                                                                                                                                                                                                                           yCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAspAsnLeuArgA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         354 laArgTrpAsnPheSerThrLeuTrpValArgArgValPheSerLeuIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        150752 CCAGACGCTACATATCGCTGCTGCAGACTCGTATAAGTTGTGGAACACGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   437 yMetIleGlyPro...IleIleAlaArgSerLeuThrProGluAsnThrI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               470 GlyAlaIlePhePheThrLeuPheAlaLysGlyGluValGlnAsnTrpAl
                                                                                                                                                                                                                                               hrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetLysGluValLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          371 GlyMetIleGlyProAlaIlePheLeuValAlaAlaGlyPheIleGlyCy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sAspTyrSerLeuAlaValAlaPheLeuThrIleSerThrThrLeuGlyG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 453 leGlyGluTrpGlnThrValPheCysIleAlaAlaIleAsnValPhe
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KEYWORDS
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Direct Submission

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Muzny, D., Scherer, S., Adams, M.D., Holt, R.A., Evans, C.A., Gocayne, J.D., Tabor, P., Williamson, A., Homsi, F.H., Dugan-Rocha, S.D., Sodergren, E.S., Hodgson, A.H., Chen, R.C., Ayele, M.A., Scott, G.S., Worley, K. W., Anamatides, P. G., Brandon, R.C., Rogers, Y., An, H., Baldwin, D., Beeson, K.Y., Brown, M., Buhay, C., Busam, D.A., Center, A., Chen, G., Clerc-Blankenburg, K., Davenport, L.B., Dietz, S.M., Chen, G., Clerc-Blankenburg, K., Davenport, L.B., Dietz, S.M., Ferriera, S., Garg, N.D.S., Houck, J., Hostin, D., Howland, T.J., Hume, J., Ibegwam, C., Jalali, M., Kovar, C., Liu, W., Mattei, B., McIntosh, T.C., Morgan, M., Moy, M., Murphy, B., Scheeler, F., Shen, H., Strong, R., Tector, C., Wang, Q., Williams, S.M., Xiang, J., Zaveril, S., Zaveril, S., Scheller, S., Zaveril, S., Zaverilla, S., Smith, H.O., Wheeler, D., Weinstock, G., Gibbs, R. and Venter, J.C.
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INFORMATION: http://www.hgsc.bcm.tmc.edu/ or email
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Direct Submission
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
            REFERENCE
AUTHORS
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JOURNAL
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CLONE LENGTH: This sequence does not necessarily represent the entire insert of this clone. Overlapping regions of clones are only

gc-help@bcm.tmc.edu

COMMENT

sequenced and submitted once, so the sequence for the remainder of the insert may be found in the record for the adjacent clones. Overlapping clones are noted at the beginning and end of the Features listing.

## ANNOTATION OF FEATURES:

STSs are identified using ePCR (Genome Res. 7:541-550) searches of a local database that includes entries from dbSTS, GDB, and

Incal mapping efforts.

Repeats are identified using RepeatMasker (A. Smit and P. Green, unpublished.) for Human and Mouse sequences.

Genes and Region of sequence similarity are identified by BLAST (Nuc. Acids Res. 25:3389-3402) similarity (expect < 1e-34) to the EST and cDNA sequences. Genes demonstrate at least two exons flanked by consensus splice sites that maintained sequence continuity across the splice junctions. Sequences that are not identical matches are annotated as similar.

SEQUENCING READ COVERAGE:Sequencing is completed to a minimum standard of double strand coverage with a minimum of 2 clones and 2 reads with no ambiguities or 2 chemistries with a minimum of 2 clones and 3 reads with no ambiguities. If the sequence quality for a region does not meet this standard, it will be indicated in the annotation as Low Coverage.

standards - estimated error rate less than 1 per 10,000 bases. Peports of lowest quality individual bases and measures of base quality are listed below. Description of the metrics can be found at URL: http://gc.bcm.tmc.edu:8088/quality.info/genbank.annotation. QUALITY OF INDIVIDUAL BASES: This sequence meets stringent quality

## QUALSTAT-REPORT. FEATURES

/organism="Drosophila melanogaster" /db\_xref="taxon:7227" /chromosome="3" Location/Qualifiers 1. .174163 source

/clone="RP98-6C4" 36149 c 35565 g 50523 t 51926 a BASE COUNT ORIGIN

## alignment\_scores:

Gaps: 6 Percent Identity: 38.685 Length: 981.50 2.853 66.538 Quality: Ratio: Percent Similarity:

alignment\_block: US-09-776-865-4 x AC023711

to: 174163 from: 1 to: AC023711 Align seg 1/1

19 gThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProValCysC 36

36 ysSerAlaArgTyrAsnLeuAlaPheLeuSerPhePheGlyPhePheVal

53 LeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMetValAs 69

pSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysAlaGluH 86 69

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112 120534	uGlySerPhePheTyrGlyTyrIleIleThrGlnIleFroGlyGlyTyrV 	129 120583
129	alAlaSerArgSerGlyGlyLysLeuLeuLeuGlyPheGlyIlePheAla ::   :::   ::::  TGGCCGAGCTGTATGGTGGGAAGAAGATCTACGGCTATGGAGTGTTGATC	145 120633
146 120634	ThralallePheThrLeuPheThrProLeuAlaAlaAspPheGlyValGl        :::        :::	162 120683
162 120684	yAlaLeuValAlaLeuArgAlaLeuGluGlyLeuGlyGluGlyValThrT        :::	179 120733
179 120734	yrProAlaMetHisAlaMetTrpSerSerTrpAlaProProLeuGluArg	195 120783
196 120784	SerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGlyThrValVa :::   :::::::          ::: aaCAAGTTCGCCGCAATCGTCTATGCGGGCTCCAATATCGGAACAGTCAT	212 120833
212	lSerLeuProLeuSerGlyVallleCysTyrTyrMetasnT :        ::      :::   TTCCATGCCGCTGGCCGGATGGCTGTGCTCGCTGGACTTCCTGGGTGGCT	226 120883
226 120884	rphrTyrValPheTyrPhePheGlyIleValGlyIleIleTrpPheIle 	242 120933
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259 120984	rProfyrGluLysGluTyrIleLeuSerSerLeuLysAsnGln	273 121033
273		273
121034	aatcaggatctagcggaggccgaggaagaggagggacagga	121083
274 121084	AGTCTGCGGGCGCCGCGGAGGAACCGTAACCTGGTCATCGCTGCTGCTCCCCCC	287 121133
287 121134	SSerLeuProLeuTrpAlaIleValValAalaHisPheSerTyrAsnTrpT    :::	304 121183
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321 121234	ArgPheAsnileGinGluAsnClyPheLeuSerAlaValProTyrLeuGl:::    ::	337 121283
337	yCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAspAsnLeuArgA	354 121333
354	laAraTroAsnPheSerThr[enTroVa]AraAraVa]PheSerTenT}e	370

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Fruit fly.

Enkaryota, Metezoa, Arthropoda; Tracheata; Hexapoda; Insecta;
Enkaryota; Metezoa, Arthropoda; Tracheata; Brachycera;
Enkaryota; Mecptera; Endopterygota; Diptera; Brachycera;
Prerygota; Neoptera; Endopterygota; Diptera;
Enses 1 to 324461)

SS 1 (bases 1 to 324461)

RS Adams,M.D., Celniker,S.E., Holt,R.M., Evans,C.A., Galle,R.F.,
George,R.A., Lewis,S.E., Richards,S., Ashburner,M., Henderson,S.N.,
Sutton,G.G., Wortman,J.R., Yandell,M.D., Zhang,Q., Chen,L.X.,
Brandon,R.C., Royers,Y.H., Blazeb,K.G., Champe,M., Pfeiffer,B.D.,
Wan,K.H., Doyle,C., Barter,E.G., Helt,G., Nelson,C.R., Gabor
Miklos,G.L., Abril,J.F., Agbayani,A., An,H.J.,
Andrews-Pfannkoch,C., Baldwin,D., Ballew,R.M., Basu,A.,
Baxendale,J., Bayraktarogul,L., Beasley,E.M., Besson,K.Y.,
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Baxendale,J., Bayraktarogul,L., Beasley,E.M., Baxe,A.,
Botchan,M.R., Bouck,J., Brokstein,P., Bottier,P., Burtis,R.C.,
Busam,D.A., Butler,H., Cadleu,E., Center,A., Chandra,I.,
Cherry,J.M., Cawley,S., Dankke,C., Davenport,L.B., Davies,P.,
Dodson,K., Doup,L.E., Downes,M., Dugan,Rocha,S., Dunkov,B.C.,
Dodson,K., Doup,L.E., Downes,M., Dugan,Rocha,S., Dunkov,B.C.,
Gelbart,W.M., Glasser,K., Glodek,A., Gong,F., Gorrell,J.H., Gulz,C.,
Gelbart,W.M., Glasser,K., Glodek,A., Gong,F., Gorrell,J.H., Kept,C.,
Kennison,J.A., Ketchum,K.A., Kimmel,B.E., Kodira,C.D., Kraft,C.,
Kravitz,S., Kulp,D., Lai,Z., Lasko,P., Lei,Y., Levitsky,A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE003491 323461 bp DNA linear INV 04-OCT-2000 Drosophila melanogaster genomic scaffold 142000013386053 section 8
                                                                                                                               121384 GCCTCCGTGGTGCCATCACTGGGCTGATTGGCATCATGTGGGCTG 121433
                                                                                                                                                                                                                                           437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      453 leGlyGluTrpGlnThrValPheCysIleAlaAlaAlaIleAsnValPhe 469
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                                                                                                                                                                                                         sAspTyrSerLeuAlaValAlaPheLeuThrIleSerThrThrLeuGlyG 404
                                                                                      GlyMetIleGlyProAlaIlePheLeuValAlaAlaGlyPheIleGlyCy
                                                                                                                                                                                                                                                                                                                           404 lyPheCysSerSerGlyPheSerIleAsnHisLeuAspIleAlaProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                 421 TyrAlaGlyIleLeuLeuGlyIleThrAsnThrPheAlaThrIleProGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 30, complete sequence.
AE003491 AE002593
AE003491.2 GI:10728219
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LOCUS AE003491
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KEYWORDS
SOURCE
ORGANISM
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PQSAQPAPLAIRKAVRATIILVPLFGLQHFLLPYRPDAGTQLDHFYQMLSVVLVSLQG
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/evidence=not_experimental
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47115. .47153)
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APTNENTTQLPFDKVVKINAVEESTEKIDEETTKANGYETYPVYGSTEASKDTETTKK
SLDKVVKINAVEESTEKVDETHTTYPSYATYPSSSVYQTYPDYKSSVTPKNDVTTQAP
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SVYKSYSSSETPDDEEDEESTANPLNKSIKINAVSDPETIQNTTRATTPFPETTKGSF
HGVEKGPEIDADSVAKSAKTESAEIPEIVKTESRMIGYRDMQLEM"
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LENGSWYRHPVSNQTWSNYTNCVDYEDLEFRQFINELYVKGYALSLLALLISIIIFLG
FKSLRCTRIRIHVHLFASLACTCVAWILMYRLVVERSETIAENPVRCTEKSNYENNIA
                                                                                                                                                                                                                                                                                                                                                                            LQVARQLYKTINITNFQLWCIGLHLVVHYFMLVNYFWMFCEGLHLHLVLVVVVSYPYSS
GNLAIACTSLHSLWATSVHGRCDFLQPLTWQWFTPSNLSESKSQRWPTALRLRQVEMS
GMSVQILTPLLLSIRQVFVKDTIVMRWFIVISWFSPIPIAIVYVFLINVLRVIVPKLH
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STEASKDDETTKKSLDKVVKINAVEKEDETTOKAEPTYSSYPTYSASSVYKTYPTYAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MTAFLVSIGFALLAGARAWDYGVPYYPAPHYFEQOQPYDLPCPP SGPESLVCAGAPGAQPSTFPSPCEVQRFRALTGINWEIIHENRCETLEVCPDNCQDQY NPVCGKYKDTRRNFRSECELQLVKCRTGHPWRKQHDGPCESRYPVPQSPRVQNYNPYA
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47115. .>4715
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Li,J., Li,Z., Liang,Y., Lin,X., Liu,X., Mattel,B., McIntosh,T.C., McLeod,M.P., McPherson,D., Merkulov,G., Milshina,N.V., Mobarry,C., Morris,J., Moshrefi,A., Mount,S.M., Moy,M., Murphy,B., Murphy,L., Muson,D.R., Nelson,K.A., Nixon,K., Nusskern,D.R., Pacleb,J.M., Palazzolo,M., Pittman,G.S., Pan,S., Pollard,J., Puri,V., Rese,M.G., Reinert,K., Remington,K., Saunders,R.D., Strong,R., Shen,H., Shue,B.C., Siden-Kiamos,I., Stapleton,M., Strong,R., Sun,E., Spier,E., Spradling,A.C., Stapleton,M., Strong,R., Sun,E., Svirskas,R., Tector,C., Turner,R., Venter,E., Wang,A.H., Wang,X., Wang,Z.Y., Wassarman,D.A., Weinstock,G.M., Weissenbach,J., Williams,S.M., Woodage,T., Worley,R.C., Wu,D., Tang,S., Yao,O.A., Yeb,R.F., Zaveri,J.S., Zhan,M., Zhou,X., Zhu,S., Zhu,X., Smith,H.O., Gibbs,R.A., Myers,E.W., Rubin,G., Zhu,X., Smith,H.O., The genome sequence of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           join(<15214. .15403,15749. .16006,16069. .16312,17722. .18091)
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Adams,M.D., Celniker,S.E., Gibbs,R.A., Rubin,G.M. and Venter,C.J.
Direct Submission
Submitsed B. Mak-2000) Celera Genomics, 45 West Gude Drive,
Rockville, MD, USA
On Oct 9, 2000 this sequence version replaced gi:7292821.
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JOURNAL
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COMMENT

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TDSFYFENHCRLEAANMKMLFQHGTELBPTEMBRCLPNCQTMKCTQVERPVCALAEIG GAIPQTFANECEMRKHECHTKQVLRILHTGPCQTPTKSGRKKKLRRNKKRPTLNASI SKFATIPKKYY IMLATPAPRSSSTTPRFFESTTTTRITTTARMPTKPTSTSSSBSPMRF QQLMNVANPMVSVSQAIDAYNVYNIPDVGHDYGRDNRLLALDVFARSWSCHRALFRAP	complement(join(<7668576911,77099>77279)) /gene="CG15719"	/product="CT35948" /db_xref="FLYBASE:FBan0015719" /db_xref="FLYBASE:FBan003440" /evidence=not_experimental complement(<76865>77279) /qene="CG15719"	/map="11D1-11D3" /db_xref="FLYBASE:FBan0015719" /db_xref="FLYBASE:FBgn0030440" /db_xref="FLYBASE:FBgn030440" /evidence=not_experimental complement(join(7668576911,7709977279)) /gene="CG15719"	ores: Quality: 981.50 Length: 517 Ratio: 2.853 Gaps: 6 ilarity: 66.538 Percent Identity: 38.685	ock: 65-4 x AE003491	/1 to: AE003491 from: 1 to: 323461	SerProValSerAspLeuAlaProSerAspGlyGluGluGlySerAspAr 19     :::   :::         ::::::::::  TCCACTCTCTCCTCTCCACCCTGCAGAAAACCATGGGCTGTGGCCCAAA 205403	9ThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProValCysC 36         GACG	ysSeralaargTyrasnLeualaPheLeuSerPhePheGlyPhePheVal 52    ::::::   :::::   :::   :::	LeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMetValAs 69 :::    :::::	pSerasnThrThralaLysaspasnargThrSerTyrGluCysalaGluH 86	isSeralaProIleLysValLeuHisAsn	GlnThrGlyLysLysTyrargTrpaspalaGluThrGlnGlyTrpIleLe 112     :::::	uGlySerPhePheTyrGlyTyrIleIleThrGlnIleProGlyGlyTyrV 129 	alalaSerargSerGlyGlyLysLeuLeuGlyPheGlyIlePheala 145 ::    :::           :::    :::   :::   TGGCCGAGCTGTATGGTGGAAGATCTACGGCTATGGAGTGTTGATC 205743	ThralallePheThrLeuPheThrProLeuAlaalaaSpPheGlyValGl 162        :::         :::	yAlaLeuValAlaLeuArgalaLeuGluGlyLeuGlyGluGlyValThrT 179          :::              :::
H 0 0 0				scores: Quality Ratio imilarity		seg 1/1 to: AE	SerProvalSerA      :::   :  CCACTCTCTCT	gThrProLeuLeu :    GACG	ysSerAlaArgTy    ::	LeuTyrSerLeuA :::   ::::  GTCTACGCGATGC	pSerAsnThrThr         AACCAAACG	isSerAlaProIl :::::   :: ACACGTGTCCACT	GlnThrGlyLysL      CAGAAGGAGGGCG	uGlySerPhePhe 	alAlaSerArgSe ::   ::: TGGCCGAGCTGTA	ThralallePheT          ACGCCGTCTTTA	yAlaLeuValAla         GCTGTTGGTCCTG
	mRNA	gene	CDS	alignment <u>.</u> Percent S	alignment US-09-77	Align se	3 205354	205404	36 205408	53	69 205498	86 205544	96 205594	112 205644	129	146 205744	162 205794

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206044 GCATGGATGTATTTGGTGTACGACAAGCCTAGCGATCATCCCAGGATCTC 206093
                         206244 ATCGTACCTCTGTGGGCCATCTTGTTGACGCAATGGGGATGGG 206293
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179 yrProAlaMetHisAlaMetTrpSerSerTrpAlaProProLeuGluArg
                                                                                                                                                                                            212 lSerLeuProLeuSerGlyValIleCys.....TyrTyrMetAsnT
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1447 AGCATCCTACCATTACAGATGAAGAACGTAGGTACATAGAGGAGAGCATT 1496
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    ralaProlleLysValLeuHisAsnGlnThrGlyLysLysTyrArgTrpA 104
                                                                                                          751 GAGAGAC.....CATCGAGCTGACAGAGGACGGTAAGCCCCTGGAG 791
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                                                                    18 pArgThrProLeuLeuGlnArgAlaProArgAla.
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LITSTLNMLIPSPAARVHGCVIFVRILQGLVEECYTPACHGIWSKWAPPLERGSLATTS
FCGSYAGAVIAMPLAGILVQYTGWSSVYFYCKGFGWWYMFWLLVSYESPAKHPTITD
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AYFEEVFGFEISKVGMLSAVPHLVMTIIVPIGGOIADFLRSKOILSTTTVRKIMNCGG
FGMEATLLLVVGYSHTRGVAISFLVLAVGFSGFAISGFNVNHLDIAPRYASILMGISN
GVGTLSGMVCPIIVGAMTKNKSREEWQYVFLIAALVHYGGVIFYALFASGEKQPWADP
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 2528)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bai,L., Xu.H., Collins,J.F. and Ghishan,F.K.
Molecular and functional analysis of a novel neuronal vesicular
glutamate transporter
J. Biol. Chem. 276 (39), 36764-36769 (2001)
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453 leGlyGluTrpGlnThrValPheCysIleAlaAlaAlaIleAsnValPhe 469
                                                                                   470 GlyAlaIlePhePheThrLeuPheAlaLysGlyGluValGlnAsnTrpAl 486
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Direct Submission
Submitted (29-NOV-2000) Pediatrics, U
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Location/Qualiflers
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/db_xref="G1:15811369"
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/db_xref="taxon:10090"
/note="C57BL/6J"
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Gunma 371-8512, Japan
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Mashima, H. and Kojima, I.
Direct Submisted (24-MAY-2000) Cell bilology, Gunma University, Institute for Molecular and cellular Regulation, 3-39-15, Showa-machi,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Métazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                            1697 AGTCCCTCACCTTGTCATGACAATCATTGTGCCTATCGGGGGGGCAAATTG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1547 GAGGAAGTTTTTCACATCCATGCCCGTCTACGCGATAATTGTTGCCAACT 1596
                                                                             1747 CAGATTTCCTAAGGAGCAAGCAAATTCTCTCTAACAACTACAGTGAGAAAG 1796
                                                                                                                                                                                                                                                                                                                                                                                                      1797 ATCATGAATTGTGGGGTTTTGGCATGGAAGCCACGCTGCTTCTGGTTGT 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2044 AGAATAAGTCCCGTGAAGAATGGCAGTATGTCTTCCTCATTGCTGCACTC 2093
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                                     299 heSerTyrAsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrTyr 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AspIleAlaProSerTyrAlaGlyIleLeuLeuGlyIleThrAsnThrPh 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           eAlaThrIleProGlyMetIleGlyProIleIleAlaArgSerLeuThrP 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           449 roGluAsnThrIleGlyGluTrpGlnThrValPheCysIleAlaAlaAla 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       466 IleAsnValPheGlyAlaIlePhePheThrLeuPheAlaLysGlyGluVa 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                     aValProTyrLeuGlyCysTrpLeuCysMetIleLeuSerGlyGlnAlaA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              399 erThrThrLeuGlyGlyPheCysSerSerGlyPheSerIleAsnHisLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MetLysGluValLeuArgPheAsnIleGlnGluAsnGlyPheLeuSerAl
                                                                                                                                                                                                                                                                                   349 laAspAsnLeuArgAlaArgTrpAsnPheSerThrLeuTrpValArgArg
                                                                                                                                                                                                                                                                                                                                                                  366 ValPheSerLeuIleGlyMetIleGlyProAlaIlePheLeuValAlaAl
                                                                                                                                                                                                                                                                                                                                                                                                                                              382 aGlyPheIleGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
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Mashima, H. and Kojima, I.
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AF271235.1 GI:8515880
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: gb_ro:AF271235
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ORGANISM
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REFERENCE
AUTHORS
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TITLE
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JOURNAL
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KEYWORDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            830 CTGTGGGGATGATTCACGGGTCGTTCTTCTGGGGCTATATCATCACGCAG 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       724
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40 rAsnLeuAlaPheLeuSerPhePheGlyPhePheValLeuTyrSerLeuA 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 LysSerProValSerAspLeuAlaProSerAspGlyGluGluGlySerAs 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30 lu.ProAlaProValCys...CysSerAla.....ArgTy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57 rgValAsnLeuSerValAlaLeuValAspMetValAspSerAsnThrThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            775 CACCGGGGTGGCAAAGTTATCAAGGAGAAAGCC.......
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ocation/Qualifiers
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                                                                                                                                                 /gene="DNPI"
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70.319
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1130 AIGCIGGAGCAGICATIGCAAIGCCCCTAGCTGGTATCCTGGTGCAGTAC 1179
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                                                                                                                                                                                                                                                                                                                        980 CCAGAGTGCATTATGGATGCGTCATCTTTGTTAGAATATTGCAAGGACTT 1029
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                                                                                                                                                                    190 aProProLeuGluArgSerLysLeuLeuSerIleSerTyrAlaGlyAlaG
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                                                                                                                         140 yPheGlyIlePheAlaThrAlaIlePheThrLeuPheThrProLeuAlaA
                                                                                                                                                                                                                                                         laAspPheGlyValGlyAlaLeuValAlaLeuArgAlaLeuGluGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           224 MetAsnTrpThrTyrValPheTyrPhePheGlyIleValGlyIleIleTr
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Takeda, J. and Onda, H.
Direct Submission
Submitted (15-SEP-1999) Jun Takeda, Gunma University, Institute for Molecular and Cellular Regulation, Laboratory of Molecular Genetics, Department of Cell Biology, 3-39-15, Showa-machi, Maebashi, Gunma 371-8512, Japan (E-mail: jtakeda@akagi.sb.gunma-u.ac.jp, Tel:81-27-220-8830, Fax:81-27-220-8889)
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LTSTLNMLIPSAARVHYGCVIFVRILQGLVEGYTYPACHGIWSKWAPPLERSRLATTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRI 18-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AB032435 3946 bp mRNA linear PRI 18-DEC-2001
Homo sapiens DNPI mRNA for differentiation-associated Na-dependent
inorganic phosphate cotransporter, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               differentiation-associated Na-dependent inorganic phosphate
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inorganic phosphate cotransporter"
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                                                                                                 Location/Qualifiers

1. 3946

/organism="Homo sapiens"

/db_xref="texton:9606"

/tissue_type="brain thalamus"

/note="vector:pGEM3zf(+); site1,2:EcoRI"
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                                                                                                                                                                                                                                                                469 PheGlyAlaIlePheThrLeuPheAlaLysGlyGluValGlnAsnTr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens brain thalamus cDNA to mRNA.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="GI:7328923"
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414 .2162
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Gaps: 9
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                         GlyIleValGlyIleIleTrpPheIleLeuTrpIleCysLeuValSerAs
                                                                                                                                                               euSerSerLeu.....LysAsnGlnLeuSerSerGlnLys.....
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                                                                                                                                                                                                                                                                                                                              lValAlaHisPheSerTyrAsnTrpThrPheTyrThrLeuLeuL
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                                                                                pThrProGluThrHisLysThrIleThrProTyrGluLysGluTyrIleL
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| SIDSIJ_Gogdate_Not_Greenseeq_geneseq_en_LNAN2001_LDXT_AREXESGE_F_201_00_0175_519
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                                                                                                                                                                                            -MODEL-frame+p2n.model -DEV-x1h
-WODEL-frame+p2n.model -DEV-x1h
-Q=/Cqn2_1/USPTO_spool/TG865/runat_15072002_082208_27459/app_query.fasta_1.1159
-DB=N_Geneseq_0272802 -QFMT=fastap -SUFFIX=p2n.rng -GAPOP=12.000
-GAPOP=4.500 -MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.500
-QGAPOP=4.500 -GGAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-GAPOP=6.000 -PGAPEXT=7.000 -YGAPOP=10.000 -XGAPEXT=0.500
-DELOP=6.000 -DELEXT=7.000 -YGAPOP=11.000 -YTHX_SCORE-pct
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE-pct
-TRANS=human40.cdi -LIST=45 -DOCALIGN=15 -MODE=LOCAL -OUTEMT=pfs
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-USER=US09776865_GCGNI_1_220 -NCPH= -ICPURS -LONGLOG
-USER=US09776865_WARN_TIMEOUT=30 -NO_XLPXX -WAIT -THREADS=1
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                                                                                                    version 4.5
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  out_format :
                                                                                                  About: Results were produced by the GenCore software, Copyright (c) 1993-2000 Compugen Ltd.
OM of: US-09-776-865-4 to: N_Geneseq_032802:*
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Search time (sec): 331.590000
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Database sequences: 1736436
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Query length: 495
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/SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001B.DAT:ABL09180 + 762.50 1361.51 /SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001B.DAT:ABL05527 + 760.00 1371.88 /SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA1998.DAT:AAV57909 + 753.00 1358.91 /SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001B.DAT:ABL08216 + 744.50 1337.99 /SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2001B.DAT:ABL15786 + 744.50 1336.30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sheep GBS toxin receptor; group B beta-haemolytic streptococci; SP55; pathological vascularisation; cancer metastases; anglogenesis; neovascularisation; reperfusion injury; scarring; keloid; chronic inflammation; rheumatoid arthritis; psoriasis; neural injury; endothelial cell proliferation; antibacterial; anticancer; anti-anglogenic; anti-inflammatory; anti-arthritic; anti-psoriatic; ss.
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                                                                                                                                                                                                                                                                                          seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2000.DAT:AAZ50876
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/product= "Sheep GBS toxin receptor"
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Percent Identity: 100.000
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Percent Similarity: 100.000
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        US-09-776-865-4 x AAZ50876
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Sheep; group B beta-haemolytic Streptococci toxin receptor; GBS; SP55, cytostatic; vulnerary; antiatherosclerotic; osteopathic; vasotropic; pervention; attendation; pathoanglogenic condition; cancer; scarr, wound healing; gliosis; nerve injury; chronic wound; reperfusion injury; keloid; rheumatoid arthritis; atherosclerosis; osteoarthritis; psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sheep group B beta-haemolytic Streptococci toxin receptor (SP55) DNA
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                                                                          roMetLeuLysSerLeuProLeuTrpAlaIleValValAlaHisPheSer
                 CTATGCTGAAATCACTGCCACTTTGGCTATTGTCGTTGCACATTTTTCT
                                                                                                                     SGluValLeuArgPheAsnIleGlnGluAsnGlyPheLeuSerAlaValP
                                                                                                                                                    GGAAGTCCTAAGGTTCAATATTCAAGAGAATGGGTTTTTATCTGCAGTCC
                                                                                                                                                                                                                                                                           AATTTAAGGGCAAGATGGAATTTTTCAACTCTGTGGGTTCGAAGAGTTTT
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                                                            TyrAsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetLy
                                                                                                                                                                                                                                               AsnLeuArgAlaArgTrpAsnPheSerThrLeuTrpValArgArgValPh
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84 laGluHisSerAlaProIleLysValLeuHisAsnGlnThrGlyLysLys

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Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, by administering group B beta-hemolytic Streptococci toxin receptor or its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Streptococci (GBS) toxin receptor protein, SP55. The present invention relates to a method for preventing or attenuating a patho-angiogenic condition in a manmal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathoangiogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and psoriasis in mammals. The proteins of the invention are also used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is a DNA encoding sheep group B beta-haemolytic
               84..1571
/*tag= a
/product= "Sheep GBS toxin receptor protein (SP55)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 134 GGACCGCACACCGCTCCTGCAGCGCGCCCCGCGGGGGGGAACCCGCTCCAG 183
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Gaps: 0
Percent Identity: 100.000
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 Location/Qualifiers
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                                                                                                                                                            02-FEB-2001; 2001WO-US03662
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Ratio: 5.287
Percent Similarity: 100.000
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                       101 TyrArgTrpAspAlaGluThrGlnGlyTrpIleLeuGlySerPhePheTy
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other;

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566 G; 749

BP; 612 A; 585 C;

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Quality:
       Sequence 2512
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2001A.DAT:AAF55900
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anion and sugar transporter; anion-cation symporter;
sialic acid transporter; ss.
ACCCTGGGAGGCTTTTGCTCTTCTGGATTTAGCATCAACCATCTGGACAT 1333
                                                                                                                                                                                                                          TGCTCCTTCGTATGCTGGTATTCTCCTGGGCATCACAAATACCTTTGCCA 1383
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ID AAF55900 standard; DNA; 2512
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AAF55900;

The present sequence is the coding sequence for human Anion and Sugar Transporter (AST) protein. AST has significant homology with several members of the anion-cation symporter (ACS) family of transporters. AST is implicated in Salia disease, and is useful in screening assays for identifying new drugs. Compounds identified via AST screening is useful for preparing a pharmaceutical suitable as an activator or inhibitor of a sialic acid transporter protein. The pharmaceutical may be used in sialic acid associated diseases and CNS/immune related disorders.

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86.263
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US-09-776-865-4 x AAF55900
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Human GBS toxin receptor; group B beta-haemolytic streptococci; HP55; pathological vascularisation; cancer metastases; angiogenesis;
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                                                                                      1071 TTCATCATTAAGAAATCAGCTTTCTTCACAGAAGTCAGTGCCGTGGGTAC
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251 ThrProGluThrHisLysThrIleThrProTyrGluLysGluTyrIleLe
                      sGluValLeuArgPheAsnIleGlnGluAsnGlyPheLeuSerAlaValP
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ID AAZ50875 standard; cDNA; 2602
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cloned
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neovascularisation; reperfusion injury; scarring; keloid;
chronic inflammation; rheumatoid arthritis; psoriasis; neural injury;
endothelial cell proliferation; antibacterial; anticancer;
anti-anglogenic; anti-inflammatory; anti-arthritic; anti-psoriatic; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New polynucleotide encoding mammalian receptor for streptococcus tuseful for diagnosis and treatment of, e.g. pneumonia in neonates
                                                                                                                                                                          "Partial human GBS toxin receptor"
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Gaps: 0
Percent Identity: 86.263
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                                                                                                                      Location/Qualifiers
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Ratio: 4.903
nilarity: 95.960
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US-09-776-865-4 x AAZ50875
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67

51 PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe

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958 TACAACTGGACTTTTTATACTTTATTGACATTATTGCCTACTTATATGAA 1007
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                                                                                                     CAGAGCATTCTGCTCCCATAAAAGTTCATCATAATCAAACGGGTAAGAAG
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Human GBS toxin receptor; group B beta-haemolytic streptococci; HP59; pathological vascularisation; cancer metastases; angiogenesis; neovascularisation; reperfusion injury; scarring; Keloid; chronic inflammation; rheumatoid arthritis; psoriasis; neural injury; endochelial cell proliferation; antibacterial; anticancer; anti-angiogenic; anti-inflammatory; anti-arthritic; anti-psoriatic; si
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                                eSerLeuIleGlyMetIleGlyProAlaIlePheLeuValAlaAlaGlyP
                                              helleGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerThr
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P-PSDB; AAY45089.
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The present cDNA sequence encodes full length human GBS (group B beta-haemolytic streptococci) toxin receptor (HP59). This sequence was cloned by using human embryo lung cDNA library as template. Expression vectors comprising this cDNA can be transformed into host cells to express GBS toxin receptor and its fragments. Detecting the receptor in tissues is used to diagnose pathological vascularisation, e.g. for detecting cancer metastases. GBS toxin receptors are useful for treating conditions associated with pathological angiogenesis or neovascularisation (specifically cancer, reperfusion injury, scarring during wound healing, Reloids, chronic inflammation (rheumatoid arthritis or psociasis) or neural injury), and to raise specific antibodies used for treating early onset disease. Inhibitors of this receptor are useful for treating early parthological or hypoxia-induced endothelial cell proliferation and
                                                    e.g. pneumonia in neonates
                      New polynucleotide encoding mammalian receptor for useful for diagnosis and treatment of, e.g. pneumon
                                                                                                 Claim 3; Page 89-93; 109pp; English
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Sequence 2930 BP; 729 A; 698 C; 681 G; 822 T; 0 other;

100 485 535 635 685 134 167 585 50 67 84 1 MetLysSerProValSerAspLeuAlaProSerAspGlyGluGluGlySe 17 tValaspSerasnThrThrAlaLysaspAsnArgThrSerTyrGluCysA GGTAGATTCAAATACAACTTTAGAAGATAATAGAACTTCCAAGGCGTGTC 84 laGluHisSerAlaProlleLysValLeuHisAsnGlnThrGlyLysLys rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe 151 LeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuValAlaLe rAspArgThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProV lyGlyLysLeuLeuLeuGlyPheGlyIlePheAlaThrAlaIlePheThr Gaps: 0 Percent Identity: 86.263 Length: to: 2930 from: 1 Ratio: 4.903 Percent Similarity: 95.960 Align seg 1/1 to: AAZ50879 2329.00 alignment\_block: US-09-776-865-4 x AAZ50879 Quality: alignment\_scores: 134 17 486 536 586 117 786 51 67 101

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                                                                                                               217 rGlyValIleCysTyrTyrMetAsnTrpThrTyrValPheTyrPhePheG
                                                                                                                                                                      234 lyIleValGlyIleIleTrpPheIleLeuTrpIleCysLeuValSerAsp
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184 laMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuSer
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; group B beta-haemolytic Streptococci toxin receptor; GBS; HP59; cytostatic; vulnerary; antiatherosclerotic; osteopathic; vasotropic; prevention; attenuation; pathoangiogenic condition; cancer; scar; wound healing; gliosis; nerve injury; chronic wound; reperfusion injury; keloid; rheumatoid arthritis; atherosclerosis; osteoarthritis; psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence is a DNA encoding full length human group B beta-haemolytic Streptococci (GBS) toxin receptor protein, HP59. The present invention relates to a method for preventing or attenuating a pathonangiogenic condition in a mammal which comprises administering to the mammal one or more GBS toxin receptors or their immunogenic fragments to induce or maintain an immune response to one of GBS toxin receptors. The method is useful for preventing or ameliorating pathonajogenic conditions such as cancer, scarring during wound healing, gliosis during repair of nerve injury, chronic wounds, keloids, reperfusion injury, rheumatoid arthritis, atherosclerosis, osteoarthritis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Preventing or attenuating pathoangiogenic conditions e.g. cancer, chronic wounds, osteoarthritis, keloids and psoriasis in a mammal, by administering group B beta-hemolytic Streptococci toxin receptor or its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human group B beta-haemolytic Streptococci toxin receptor (HP59) DNA
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                                    1786 TGTTTTTGGTGCCATTTTCTTTACACTATTCGCCAAAGGTGAAGTACAAA 1835
467 nValPheGlyAlaIlePheThrLeuPheAlaLysGlyGluValGlnA
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ID AAD10325 standard;
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495

Length:

Quality: 2329.00

alignment\_scores

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986 ATTTCGTATGCAGGAGCACAGCTTGGGACAGTAATTTCTCTTTCTCTTTC 1035
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151 LeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuValAlaLe 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  267 uSerSerLeuLysAsnGlnLeuSerSerGlnLysSerValProTrpIleP 284
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                                                                                                                                           1 MetLysSerProValSerAspLeuAlaProSerAspGlyGluGluGlySe 17
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       736 TGGCTACATCATCACAGATTCCTGGAGGATATGTTGCCAGCAAAATAG
                                                                                                                                                                                                                                                                                                           51 PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe
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                                                                                                                                                                                                                17 rAspArgThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84 laGluHisSerAlaProIleLysValLeuHisAsnGlnThrGlyLysLys
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201 IleSerTyrAlaGlyAlaGlnLeuGlyThrValValSerLeuProLeuSe
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vaps: 0
Percent Identity: 86.263
                                                                                                         from: 1
4.903
                                                                                                        to: AAD10325
                                                    alignment_block:
US-09-776-865-4 x AAD10325
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us-09-776-865-4.p2n.rng

WO200153312-A1

Homo sapiens.

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seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2001A.DAT:AA158115
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                                                                                                                                        1286 TACAACTGGACTTTTTATACTTTATTGACATTATTGCCTACTTATATGAA 1335
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                                                                                                                                                                       sGluValLeuArgPheAsnIleGlnGluAsnGlyPheLeuSerAlaValP 334
                                                                                                                                                                                                                                                                                                    AsnLeuArgAlaArgTrpAsnPheSerThrLeuTrpValArgArgValPh 367
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ### TECTCCTTCGTATGCTGGTATCCTCCTGGGCATCACAAATACATTTGCCA
                                               roMetLeuLysSerLeuProLeuTrpAlaIleValValAlaHisPheSer
                                                                                                                                                                                                                                                                                                                                                                                                                               helleGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerThr
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ID AAI58115 standard; cDNA; 1488 BP.
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Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease, Haufington's disease, haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation; Human polynucleotide SEQ ID NO 318. (first entry) leukaemia; ss 22-OCT-2001

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The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM3642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.

Note: The sequence data for this patent did not form part of the printed
                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                           Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries \boldsymbol{\cdot}
                                                                                                                                                                                                                                                                                                                          Ren F, Wa
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                                                                                                                                                                                                                                                                                                                        Oian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1488 BP; 368 A; 318 C; 323 G; 479 T; 0 other;
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Percent Identity: 86.061
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Xu C, Xue AJ,
, Drmanac RT;
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                                                                                                                                                                                                                                                                                                                        Chen R,
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                                                                                                                                                                                                                                                                                                                      Liu C, Asundi V, Che
Wang Z, Wehrman T, Xo
Zhou P, Goodrich R,
                                                                                                                                                                                 19-JUL-2000; 2000US-0620312.
14-SEP-2000; 2000US-0653450.
14-SEP-2000; 2000US-0653191.
19-OCT-2000; 2000US-0633036.
29-NOV-2000; 2000US-0727344.
                                                                                                                                                   25-APR-2000; 2000US-0552317
09-JUL-2000; 2000US-0598042
                                                                                                   2000WO-US34263
                                                                                                                                   2000US-0488725
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US-09-776-865-4 x AAI58115
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P-PSDB; AAM38959.
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Zhou P,
                                                                                                                                                                                                                                                                                          (HYSE-) HYSEQ INC.
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03-AUG-2000; 2
14-SEP-2000; 2
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                                                                                                   26-DEC-2000;
                                                                                                                                   21-JAN-2000;
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                                                                 26-JUL-2001
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Wang J, V
Zhao QA,
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117
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                                     tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA
                                                                         84 laGluHisSerAlaProIleLysValLeuHisAsnGlnThrGlyLysLys
                                                                                                                                                                                         lyGlyLysLeuLeuLeuGlyPheGlyIlePheAlaThrAlaIlePheThr
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and their
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Wakamatsu A, Sugiyama T, Nagai K, Kojima S, Otsuki T, Koga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              830 Primers useful for synthesizing full length cDNA clones use in genetic manipulation \ensuremath{^{\circ}}
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1250
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        full length cDNA; cDNA synthesis; oligo-capping;
                                     1151 TCATTGGCTGTGATTATTCTTTGGCCGTTGCTTTCCTAACTATATCAACA
                                                                                                                                                  hrIleProGlyMetIleGlyProlleIleAlaArgSerLeuThrProGlu
                                                                                                                                                                                                                                                                                                    helleGlyCysAspTyrSerLeuAlaValAlaPheLeuThrlleSerThr
                                                                                                                                      401 ThrLeuGlyGlyPheCysSerSerGlyPheSerIleAsnHisLeuAspIl
                                                                                                                                                                                       eAlaProSerTyrAlaGlyIleLeuLeuGlyIleThrAsnThrPheAlaT
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2000JP-0118774.
2000JP-0183765.
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P-PSDB; AAM93914.
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02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
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Η;

IleSerTyrAlaGlyAlaGlnLeuGlyThrValValSerLeuProLeuSe

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The invention relates to primers for synthesising full length cDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nuclectide sequences of 5'- and 3'-ends of the CDNA molecules have been determined. Primers for synthesising the full length cDNA are useful for clarifying the function of the protein encoded by the cDNA. The full length clones were obtained by construction of full length enriched cDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily human cDNA of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
         88999999999888
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Sequence 2712 BP; 677 A; 619 C; 619 G; 797 T; 0 other

Gaps: 1 Percent Identity: 80.718 Length: Quality: 2302.00 Ratio: 4.846 Percent Similarity: 89.792 US-09-776-865-4 x AAK94876 alignment\_scores: alignment\_block:

to: 2712 from: 1 Align seg 1/1 to: AAK94876

MetLysSerProValSerAspLeuAlaProSerAspGlyGluGluGlySe

rAspArgThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProV 

133 GGACCGCACGCCTCTTCTACCGGCCCCCCACGGGCCGAAGCCGCTCCAG

PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe 

tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA

laMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuSer 

lylleValGlylleIleTrpPheIleLeuTrpIleCysLeuValSerAsp || :::||||||:::||||||:::||||||| 983 ACCAAGTAGTAGGACGACGACTTTCTTCACAGAAGTCAGTGCCGTGGGT CAACACTGGGAGGCTTTTGCTCTTCTGGATTTAGCATCAACCATCTGGAT aThrIleProGlyMetIleGlyProIleIleAlaArgSerLeuThrProG CACTATTCCAGGAATGGTTGGGCCCGGTCATTGCTAAAAGTCTGACCCCTG rGlyValIleCysTyrTyrMetAsnTrpThrTyrValPheTyrPhePheG 883 TTCATCATTAAGAAATCAGGCTGGAGTGCAGTAGCATGATCTTGGCTCAC 933 TGCAGCCTCCCTCTGCCTCCGGGTTCAAGCCATCCTCCCACCTCAGCCT eProMetLeuLysSerLeuProLeuTrpAlaIleValValAlaHisPheS 1033 ACCCATTTTAAAATCCCTGCCACTTTGGGCTATCGTAGTTGCACACTTTT erTyrAsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrTyrMet LysGluValLeuArgPheAsnIleGlnGluAsnGlyPheLeuSerAlaVa AAGGAGATCCTAAGGTTCAATGTTCAAGAGAATGGGTTTTTATCTTCATT yPheIleGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerT hrThrLeuGlyGlyPheCysSerSerGlyPheSerIleAsnHisLeuAsp IlealaProSerTyralaGlyIleLeuLeuGlyIleThrAsnThrPheAl luAsnThrIleGlyGluTrpGlnThrValPheCysIleAlaAlaIle ThrProGluThrHisLysThrIleThrProTyrGluLysGluTyrIleLe 333 lProTyrLeuGlyCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaA spAsnLeuArgAlaArgTrpAsnPheSerThrLeuTrpValArgArgVal PheSerLeuIleGlyMetIleGlyProAlaIlePheLeuValAlaAlaGl uSerSerLeuLysAsn. 

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                                                                                                   seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-embl/NA2000.DAT:AAZ50880
              1583 AATGTTTTTGCTGCCATTTTCTTTACACTATTCGCCAAAGGTGAAGTACA 1632
467 AsnvalPheGlyAlaIlePhePheThrLeuPheAlaLysGlyGluValGl 483
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  Human GBS toxin receptor; group B beta-haemolytic streptococci; HP59; pathological vasularisation; cancer metastases; anglogenesis; neovascularisation; reperfusion injury; scarring; keloid; chronic inflammation; rheumatoid arthritis; psoriasis; neural injury; endothelial cell proliferation; antibacterial; anticancer; anti-anglogenic; anti-inflammatory; anti-arthritic; anti-psoriatic; ss.
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                                  TGGCTACATCATCACACANATTCCTGGAGGATATGTTGCCAGCANAANNG 400
                                                                       134 lyGlyLysLeuLeuLeuGlyPheGlyIlePheAlaThrAlaIlePheThr 150
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rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG 134
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The present invention provides the protein and coding sequences of human sodium dependent phosphate co-transfer protein 35. The sequences can be used in the treatment of hypophosphaturia, hypercalcaemia, hypophosphataemic rickets and nephritis. The present sequence is the
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                                                                                                                                                                                                                                                              seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2001A.DAT:AAH79234
                                                                                                                                                                                                                                                                                                                                                                                         Human sodium dependent phosphate co-transfer protein 35 cDNA
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                                         hrIleProGlyMetIleGlyProIleIleAlaArgSerLeuThrProGlu
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Percent Identity: 89.097
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   erGlyPheSerIleAsnHisLeuAspIleAlaProSerTyrAlaGlyIle 424
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                                                                                         SerSerGlnLysSerValProTrpIleProMetLeuLysSerLeuProLe
                                                                                                                                                                                                                                                                                                                                               353 TTGGGCTATCGTAGTTGCACACTTTTCTTACAACTGGACTTTTTATACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sMetIleLeuSerGlyGlnAlaAlaAspAsnLeuArgAlaArgTrpAsnP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        553 TTTCAACTTTATGTGTTCGCAGAATTTTTAGCCTTATAGGAATGATTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProAlaIlePheLeuValAlaAlaGlyPheIleGlyCysAspTyrSerLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 GAGGGTGTTACATTCCAGCCATGCATGCCATGTGGTCTTCTTGGGCTCC
                                             OProLeuGluArgSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnL
                                                                                                                                        225 AsnTrpThrTyrValPheTyrPhePheGlyIleValGlyIleIleTrpPh
                                                                                                                                                                                        elleLeuTrplleCysLeuValSerAspThrProGluThrHisLysThrI
                                                                                                                                                                                                    258 leThrProTyrGluLysGluTyrIleLeuSerSerLeuLysAsnGlnLeu
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                                             191
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The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as allocalised neuropathies and central nervous system diseases, such as allocalised neuropathies and shearse, munitation is disease, munitation is and shy-brager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, activity, chemoteartic/chemokinetic activity, haemostatic and thrombolytic activity, chemoteartic/chemokinetic and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and Note: The sequence data for this patent did not form part of the printed specification.
                                                                                                                                                                                                                                                                                                         Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Humenostatic; amyotrophic lateral sclerosis; Sly-Drager Syndrome; chemotactic; chemotactic; thrombolytic; drug screening; arthritis; inflammation;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          disorders
                                                                                                                   seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2001A.DAT:AAI59901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ren F, Ware Zhang J;
                952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for treating
903 ACACTATTCGCCAAAGGTGAAGTACAAAACTGGGCTCTCAATGATCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Oian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful
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Xu C, Xue AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Asundi V, Chen R, Ma Y, Wehrman T, Xu C, Xue AJ Goodrich R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID NO 3890; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l nucleic acids and polypeptides, us
as central nervous system injuries
                                                                                                                                                                                                                                                                          Human polynucleotide SEQ ID NO 3890.
                                                                                                                                                                       ВР
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25-ARR-2000; 2000US-055317.

09-JUL-2000; 2000US-0598042.

19-JUL-2000; 2000US-0633150.

14-SEP-2000; 2000US-0653450.

14-SEP-2000; 2000US-065311.

19-CT-2000; 2000US-063316.

29-NOV-2000; 2000US-0727344.
                                                                                                                                                   seq_documentation_block:
ID AAI59901 standard; cDNA; 929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                        (first entry)
                                                  491 nGlyHisArgAsn 495
                                                                      2001-442253/47.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Liu C,
Wang Z,
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                                                                                                                                                                                                                                                                                                                                                                                                   leukaemia; ss
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                                                                                                                                                                                                                                        22-OCT-2001
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Wang J, Y
Zhao QA,
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laMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuSer 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134 lyGlyLysLeuLeuLeuGlyPheGlyIlePheAlaThrAlaIlePheThr 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuValAlaLe 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        234 lyIleValGlyIleIleTrpPheIleLeuTrpIleCysLeuValSerAsp 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uArgAlaLeuGluGlyLeuGlyGluGlyValThrTyrProAlaMetHisA 184
                                                                                                                                                                                       1 MetLysSerProValSerAspLeuAlaProSerAspGlyGluGluGlySe 17
                                                                                                                                                                                                                                                                                                                                                                                                         tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA 84
                                                                                                                                                                                                                                                       GGACGCACGCTCTTCTACCGGGCGCCCCACGGGCCGAGCCGCTCCAG
                                                                                                                                                                                                                                                                                                              laGluHisSerAlaProIleLysValLeuHisAsnGlnThrGlyLysLys
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                                                                                                                                                                                                                                                                                                alCysCysSerAlaArgTyrAsnLeuAlaPheLeuSerPhePheGlyPhe
                                                                                                                                                                                                                                                                                                                                                    PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rGlyValIleCysTyrTyrMetAsnTrpThrTyrValPheTyrPhePheG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       769 TGGAATAATTTGCTACTATATGAATTGGACTTATGTCTTCTACTTTTTG
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             0 other;
                                                              Length: 270
Gaps: 0
Percent Identity: 82.963
             268 T;
                                                                                                                                                            to: 929
             C; 223 G;
                                                                                                                                                            from: 1
            224
            214 A;
                                                             Quality: 1217.00
Ratio: 4.810
nilarity: 93.704
                                                                                                                                                            to: AAI59901
                                                                                                                                US-09-776-865-4 x AAI59901
            Sequence 929 BP;
                                                                                         Percent Similarity:
                                                     alignment_scores
                                                                                                                     alignment_block:
                                                                                                                                                            Align seg 1/1
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The invention relates to primers for synthesising full length CDNA clones. 830 cDNA molecules encoding a human protein have been isolated and nucleotide sequences of 5'- and 3'-ends of the CDNA molecules have been determined. Primers for synthesising the full length CDNA are useful for clarifying the function of the protein encoded by the CDNA. The full length clones were obtained by construction of full length enriched CDNA libraries that were synthesised by the oligo-capping method. The primers enable the production of the full length cDNA easily without any special methods. The present sequence was used as the representative sequence from a human clone which was used in homology searches to identify the clone.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in CD-ROM format directly from EPO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             830\ \mathrm{Primers} useful for synthesizing full length cDNA clones and their use in genetic manipulation -
                                                                                                                                           seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2001A.DAT:AAK93901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Η;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Isogai T, Hayashi K, Ishii S, Kawai Y;
I T, Nagai K, Kojima S, Otsuki T, Koga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 11; SEQ ID NO 2361; 1380pp + sequence listing; English.
                                                                                                                                                                                                                                                                                                                                          Human; full length cDNA; cDNA synthesis; oligo-capping; ss.
251 ThrProGluThrHisLysThrIleThrProTyrGluLysGluTyrIleLe 267
                                                                                                                                                                                                                                                                                                          Human cDNA clone representative sequence, SEQ ID NO: 2361
                  Sequence 853 BP; 198 A; 200 C; 213 G; 239 T; 3 other;
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82.258
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Percent Identity:
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                                                                                                                                                                                                 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99JP-0194486.
2000JP-0118774.
2000JP-0183765.
                                                                                                                                                                              seq_documentation_block:
ID AAK93901 standard; cDNA; 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-JUL-2000; 2000EP-0114089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wakamatsu A, Sugiyama T,
                                                                                                                                                                                                                                                                     (first entry)
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Percent Similarity: 93.145
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US-09-776-865-4 x AAK93901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nishikawa T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-524255/58.
                                                                                                     919 TTCATCATTA 928
                                                                     uSerSerLeu
                                                                                                                                                                                                                                                                                                                                                                                                                    EP1130094-A2.
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02-MAY-2000;
                                                                                                                                                                                                                                                                     06-NOV-2001
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                                                                                                                                                                                                                                   AAK93901;
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Otsuki

Ishii S,

Kawai Y;

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34 183 233

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clones. 830 contained by the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of control of the control of the control of the control of control of the control of the control of the control of control of the control of the control of the control of control of control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of control of the control of the control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          830 Primers useful for synthesizing full length cDNA clones and their use in genetic manipulation \cdot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to primers for synthesising full length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 2; SEQ ID NO 824; 1380pp + sequence listing; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133 GGACCGCACGCCTCTTCTACCGGCCCCCACGGGCCGAAGCCGCTCCAG 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183 TGTGCTGCTCGTTGGTTACAACTTAGCAATTTTGGCCTTTTTTGGTTTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 rAspArgThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 838 BP; 189 A; 196 C; 210 G; 237 T; 6 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caps: 1
Percent Identity: 80.328
                                                                                                                                                                                                                                                                                                                                                   kawa T, Isogai T, Hayashi K, Isi
Sugiyama T, Nagai K, Kojima S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
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                                                                                                                                                                                               99JP-0194486.
2000JP-0118774.
2000JP-0183765.
                                                                                                                                                 2000EP-0114089
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Ratio: 4.585
ilarity: 91.393
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US-09-776-865-4 x AAK92364
                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-524255/58.
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                                                                                                                                                                                                                                                                                                                                                                          Wakamatsu A,
                                                                                                                                                                                                  08-JUL-1999;
11-JAN-2000;
     Homo sapiens
                                                                                                                                                   07-JUL-2000;
                                                                                                                                                                                                                                                   02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores
                                                                                                     05-SEP-2001
                                                                                                                                                                                                                                                                                                                                                   Ota I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
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                                                                                                                                                                                                                                                                                                                                                282
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 134
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MetLysSerProValSerAspLeuAlaProSerAspGlyGluGlySe 17
                                                                                                                       133 GGACGCACGCTCTTCTACCGGGCCCCCACGGGCCGAAGCCGCTCCAG
                                                                                                                                                                                                                                                                                                                         CAGAGCATTCTGCTCCCATAAAAGTTCATCATAATCAAAACGTAAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alCysCysSerAlaArgTyrAsnLeuAlaPheLeuSerPhePheGlyPhe
                                                                                                                                                                                                                                              TGTGCTGCTCTCGTTACAACTTAGCAATTTTGGCCTTTTTTGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84 laGluHisSerAlaProIleLysValLeuHisAsnGlnThrGlyLysLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rGlyValIleCysTyrTyrMetAsnTrpThrTyrValPheTyrPhePheG
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                                                                                                                                                                                                                                                                                               PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe
                                                                                                                                                                                                                                                                                                                                                                                               tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TyrArgTrpAspAlaGluThrGlnGlyTrpIleLeuGlySerPhePheTy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uArgAlaLeuGluGlyLeuGlyGluGlyValThrTyrProAlaMetHisA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184 laMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IleSerTyrAlaGlyAlaGlnLeuGlyThrValValSerLeuProLeuSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  234 lylleValGlyIleIleTrpPheIleLeuTrpIleCysLeuVal 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GNACTATTGGAAAATTTGGGTTCTTTTGNGGATCTNGGTAGTA 826
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block
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Claim 1; SEQ ID NO 5789; 21pp + Sequence Listing; English.

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New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name: /SIDS1/gcgdata/hold-geneseq/geneseqn-emb1/NA2001B.DAT:ABL03769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster expressed polynucleotide SEQ ID NO 5789
                                                                                                        682
                         383 TACCAATGGGATGCAGAAACTCAAGGATGGATTCTCGGTTCCTTTTTTA 432
                                                                                                                                                              167
                                                                                                                                                                                                                  184
                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                        rGlyValIleCysTyrMetAsnTrpThrTyrValPheTyrPhePheG 234
                                                                                                                                                                                                                                                                                                                                                                                              101 TyrArgTrpAspAlaGluThrGlnGlyTrpIleLeuGlySerPhePheTy
                                                                     rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG
                                                                                                                                                                                                                                                                                    633 CCATGTGGGTCTTCTTGGGCTCCCCCTCTTGAAAGAAGCAACTTCTTAGC
                                                                                                                                                                                                                                                                                                                        201 IleSerTyrAlaGlyAlaGlnLeuGlyThrValValSerLeuProLeuSe
                                                                                                                                    483 GGGGGAAAATGCTGCTAGGATTTGGGATCCTTGGCACTGCTGTCCTCACC
                                                                                                                                                                                                                   uArgAlaLeuGluGlyLeuGlyGluGlyValThrTyrProAlaMetHisA
                                                                                                                                                                                                                                                                     184 laMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                 234 lyIleValGlyIleIleTrpPheIleLeuTrp 244
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ID ABL03769 standard; cDNA; 1939
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11-JUL-2000; 2000US-0614150
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-656860/75
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is
                                                                                                                                                                                    (ABB57737-ABB72072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                    The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThralallePheThrLeuPheThrProLeuAlaAlaAspPheGlyValGl 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            yrProAlaMetHisAlaMetTrpSerSerTrpAlaProProLeuGluArg 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            353 TCCGACGACGAAGCGGACGACGAACGGGAGGCGTTTTGCTCCGGCGAACG 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           403 ACCECTAATCCGCTCCAGCGCCGTGCGGAGGAAAACCATGGCTGTGGCC 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53 LeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMetValAs 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysAlaGluH 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :::::||||:::
597 ACACGTGTCCACTACCGCACCACATCACAATGGTAGCGATCCCAATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        747 TGGCCGAGCTGTATGGTGGGAAGAAGATCTACGGCTATGGAGTGTTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11 SerAspGlyGluGluGlySerAspArg.....Th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20 rProLeuLeuGlnArgAlaProArgAlaGluProAlaProValCys...C
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlnThrGlyLysLysTyrArgTrpAspAlaGluThrGlnGlyTrpIleLe
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86 isSerAlaProlleLysValLeuHisAsn......
                                                                                                                                                                                                                                                                                          Sequence 1939 BP; 410 A; 558 C; 552 G; 419 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Identity: 39.458
                                                                                                                                                                                                                                                                                                                                                                               Length:
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67.118
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                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
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us-09-776-865-4.p2n.rst

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AT07766.5prime AT D
UI-R-C4-akw-c-03-0-
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EST469519 tomato sh
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/tissue_type="placenta"
/tissue_type="placenta"
/note="vector: pCWVSPORT 6; Site_1: NotI; lst strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-stranded cDNA was digested with Not I and cloned into the Not I and Eco RV sites of the pCMVSPORT 6 vector. Library was normalized by Life Technologies. Contact : Feng Liang Life Technologies, a division of Invitrogen 9800 Medical Center Drive Rockville, maryland 20850, USA Fax : (1) 301 610 8371
Email : filang@lifetech.com URL :
http://tulllength.invitrogen.com"

36 a 224 c 224 g 300 t lothers
                                                                                                                                                                                                                seq_documentation_block:
LOCUS AL550137
LOCUS AL550137
DEFINITION AL550137 LTI_NFL006_PL2 Homo sapiens cDNA clone CS0DIO40YK17 5
prime, mRNA sequence.
ACCESSION AL550137
VERSION AL550137.1 GI:12886813
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr.
Location/Qualifiers
1. 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 985) Limates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 985) Lilw.B.; Gruber, C., Jessee, J. and Polayes, D. Full-length CDNA libraries and normalization Unpublished (2001) Contact: Genoscope
  BE977644 R
BF505525 A
AW531337 U
BG296175 G
BG123873 B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51 PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length: 309
Gaps: 0
Percent Identity: 83.819
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786
321
783
761
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7.4e-31
2.4e-31
1.0e-30
1.7e-30
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  725.67
719.95
728.77
717.43
713.46
  433.50
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427.50
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                                                                                                                                                               seq_name: gb_est1:AL550137
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  gb_est2:BE977644
gb_est2:BF505525
gb_est1:AW531337
gb_est2:BG296175
gb_est2:BG123873
                                                                                                                                                                                                                                                                                                                                                                                                        human.
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TITLE
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AL229388 Tetraodon nigroviridis
BI753164 6030260281 NIH MGC_11
BF495471 ATT04410 5prime AT Dros
N31254 yx53h06.rl Soares meland
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BF502767 AT18580.5prime AT Dros
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BF123545 601759862F1 NCI_CGAP_1
BE892556 601433358F1 NIH_MGC_77
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                                                                                                                                                                                                     -MODEL-frame-pan model -DEV=x1h
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-QGAPEXT=0.100 -LOOPCL=0.000 -LOOPEXT=0.000 -QGAPOP=4.500
-GGAPEXT=0.000 -YGAPOP=10.000 -YGAPOF=7.000 -PGAPOP=6.000
-DELXT=7.000 -YGAPOP=10.000 -YGAPOF=7.000 -YGAPOP=5.000
-DELXT=7.000 -START=1 -MATRIX=DISUME2 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=200 -THR_SCORE=PCT -THR_MAX=100 -THR_MIN=0
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-NCPU=6 -ICPU=3 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30
                                                                                                             version 4.5
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     out_format : pfs
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.6e-37
.2e-35
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.8e-33
.7e-31
                                                                                                        About: Results were produced by the GenCore Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strd Orig ZSCore + 1395.00 2364.64 + 10395.00 2364.64 + 10395.00 15156.57 + 921.00 1513.67 + 921.00 1513.67 + 921.00 1513.67 + 921.00 1513.67 + 921.00 1513.67 + 921.00 1513.67 + 921.00 1513.67 + 921.00 1513.67 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 1362.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 120.21 + 921.00 12
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Database length: -1841457050
Search time (sec): 2434.030000
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Query: US-09-776-865-4
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9b_est2:B1697765

9b_htc:BCG2331

9b_est2:B1660521

9b_est2:B1660521

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gb_est2:BM79717
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gb_est2:N31254
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/clone="IMAGE:5350046"
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/lab_host="DH10B"
/note="Organ: mammary; Vector: pcMV-SPORT6; Site_1: NotI; Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT. Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT. Average insert 2.5 kb. Library constructed by Life Technologies, catalog # 12018-016. Investigators providing samples: Lothar Hennighausen/Priscilla Furth, NIH Reference for transgenic model: Li et al., Cell Growth and Differentiation 7, 3-11 (1996). Note: this is a NCI_CGAP
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 801)
                                                                                                                                Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Priscilla Furth
                                                                                                                                                                                          CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at:
                                       NIH-MGC http://mgc.nci.nih.gov/.
Mational Institutes of Health, Mammalian Gene Collection
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            109 GlyTrpIleLeuGlySerPhePheTyrGlyTyrIleIleThrGlnIlePr 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59 AsnLeuSerValAlaLeuValAspMetValAspSerAsnThrThrAlaLy 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9 AlaProSerAspGlyGluGluGlySerAspArgThrProLeuLeuGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25 gAlaProArgAlaGluProAlaProValCysCysSerAlaArgTyrAsnL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42 euAlaPheLeuSerPhePheGlyPhePheValLeuTyrSerLeuArgVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202 AACCTGAGTGTTGCGTTAGTGGACATGGTAGATTCAAATACAACTCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75 sAspAsnArgThrSerTyrGluCysAlaGluHisSerAlaProIleLysV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    252 TGATAATAGAACGTCTAAGGAGTGTGCGGAACATTCTGCCCCCATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              vaps: 4
Percent Identity: 81.377
                                                                                                                                                                                                                                                                                                 to: 801
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/organism="Mus musculus"
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Ratio: 4.553
Percent Similarity: 92.308
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US-09-776-865-4 x BI661062
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                   260 GGTAGATTCAAATACAACTTTAGAAGATAATAGAACTTCCAAGGCGTGTC 309
                                                                                                                                                                                          101 TyrargrpaspalaGluThrGlnGlyTrpIleLeuGlySerPhePheTy 117
                                                                                                                                                                                                                                                                                                                                                                         CAGAGCATTCTGCTCCCATAAAAGTTCATCATAATCAAACGGGTAAGAAG 359
                                                                                                                                                                                                                                      360 TACCAATGGGATGCAGAAACTCAAGGATGGATTCTCGGTTCCTTTTTTA 409
                                                                                                                                                                                                                                                                                     rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuValAlaLe 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 234
                67 tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84 laGluHisSerAlaProIleLysValLeuHisAsnGlnThrGlyLysLys
                                                                                                                                                                                                                                                                                                            410 TGGCTACATCATCACAGATTCCTGGAGGATATGTTGCTACCAGCAAATA.G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rGlyValIleCysTyrTyrMetAsnTrpThrTyrValPheTyrPhePheG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 234 lyIleValGlyIleIleTrpPheIleLeuTrpIleCysLeuValSerAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201 IleSerTyrAlaGlyAlaGlnLeuGlyThrValValSerLeuProLeuSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ThrProGluThrHisLysThrIleThrProTyrGluLysGluTyrIleLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        809 ACACCACAAAAACACAAGAATTTCCCATTATGAAAAGGAATACATTCT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BI661062.1 GI:15575298
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B1661062
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DEFINITION

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ORGANISM

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and directionally cloned (EcoRV site is destroyed upon cloning). Average insert size 1.7 kb, insert size range 1.2-3.3 kb. Library is normalized and enriched for full-length clones and was constructed by C. Gruber (Invitrogen). Research Genetics tracking code 027. Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              277 GGTAGATTCAAATACAACTTTAGAAGATAATAGAACTTCCAAGGCGTGTC 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuValAlaLe 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MetLysSerProValSerAspLeuAlaProSerAspGlyGluGluGlySe 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17 rAspArgThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34 alCysCysSerAlaArgTyrAsnLeuAlaPheLeuSerPhePheGlyPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51 PheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuValAspMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrGluCysA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84 laGluHisSerAlaProlleLysValLeuHisAsnGlnThrGlyLysLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   327 CAGAGCATICTGCTCCCATAAAAGTTCATCATAATCAAACGGGTAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117 rGlyTyrIleIleThrGlnIleProGlyGlyTyrValAlaSerArgSerG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         427 TGGCTACATCATCACACAGATTCCTGGAGGATATGTTGCCAGCAAAATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184 laMetTrpSerSerTrpAlaProProLeuGluArgSerLysLeuLeuSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IleSerTyrAlaGlyAlaGlnLeuGlyThrValVal.SerLeuProLeuS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            527 CTGTTCACTCCCATTGCTGCAGATTTAGGAGTTGGACCACTCATTGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps: 1
Percent Identity: 83.260
                                                                                                                                                                                                                                          Length:
                                                                                                                                                                                                                                                                                                                                                                                       to: 754
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                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                                                                                     953.00
4.453
94.273
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                                                                                                                                                                                                                                                                                                                         alignment_block:
US-09-776-865-4 x BI907284
                                                                                                                                                                                                                                            Quality:
                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                             Ratio:
                                                                                                                                171
                                                                                                                                                                                                                      alignment_scores
                                                                                                                                BASE COUNT
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Experimental of 1540

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

Unpublished (1999)

Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
CLONA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAMIS34 row: d column: 15
High quality sequence stop: 750.

High quality sequence stop: 750.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            non-activated adult donors. Library is oligo-dT primed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pCMV-SPORT6; Site_1: Not1; Site_2: EcoRV (destroyed): RNA source leukocytes from anonymous pool c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      225
                                                                                                                                158
                                                                                                                                                                                                                                                                                               651
  352 GGGTGGATTCTCGGCTCTTTTTTACGGCTACATCGTCACCCAGATTCC 401
                                                                  125 oGlyGlyTyrValAlaSerArgSerGlyGlyLysLeuLeuLeuGlyPheG
                                                                                                                             142 lyIlePheAlaThrAlaIlePheThrLeuPheThrProLeuAlaAlaAsp
                                                                                                                                                      PheGlyValGlyAlaLeuValAlaLeuArgAlaLeuGluGlyLeuGlyGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlyThrValValSerLeuProLeuSerGlyValIleCysTyrTyrMetAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      225 nTrpThrTyrValPheTyr.PhePheGlyIleValGlyIleIleTrp.Ph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 elleLeuTrpIleCysLeuValSerAspThrProGlu 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .754
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BI907284
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LOCUS
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JOURNAL
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226

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us-09-776-865-4.p2n.rst

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DEFINITION
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TITLE
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                            357
                                                                                                                     373
                                                                                                                                                                                                                                                                                                           407
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Organ: prostate; Vector: pDNR-LIB (Clontech);
Site=1: Sfil (ggcgcctcggcc); Site=2: Sfil (ggcattatggcc); Site=1: Sfil (ggcgcctcggcc); Site=2: Sfil (ggcattatggcc); Site=1: Sfil (ggcgcctcggcc); Site=2: Sfil (ggcattatggcc); Site=1: Sfil (ggcgcctcggcccsqryrggcc-3' and 3' adaptorsequence: 5'-ATTCTAGAGGCCGATTATGGCC-3' and 3' adaptorsequence: 5'-ATTCTAGAGGCCGACTATGG-GT(30)BN-3' (where B = A, C, or G and N = A, C, G, or T). Average insert size 1.4 kb (range 0.5-4.0 kb). 14/15 colonies contained inserts by PCR. This library was enriched for full-length clones and was constructed by Clontech Laboratories (Palo Alto, CA)."

Laboratories (Palo Alto, CA)."
                                                                                                           E l (bases 1 to 626)

NIH-MGC http://mgc.nci.nih.gov/.

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

L Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs.r@mail.nih.gov

Tissue Procurement: CLONETECH Laboratories, Inc.

CDNA Library Preparation: CLONETECH Laboratories, Inc.

CDNA Library Preparation: CLONETECH Laboratories, Inc.

CDNA Library Preparation: CLONETECH Caboratories, Inc.

CLONE distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/Library at:

http://image.lihl.gov

Plate: LLCM1067 row: o column: 20
                                                                                                                                                                                                                                                                                                      Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          323 nIleGlnGluAsnGlyPheLeuSerAlaValProTyrLeuGlyCysTrpL 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          102 TATGTATGATCCTGTCTGGTCAAGCTGCTGACAATTAAGGGCAAAATGG 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            307 ThrLeuLeuThrLeuLeuProThrTyrMetLysGluValLeuArgPheAs 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52 TGTTCAAGAGAATGGGTTTTTATCTTCATTGCCTTATTTAGGCTCTTGGT 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  340 euCysMetIleLeuSerGlyGlnAlaAlaAspAsnLeuArgAlaArgTrp 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon.9606"
/clone="IMAGE:4248811"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 ACTITATIGACATIATIGCCTACTIATATGAAGGAGATCCTAAGGTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length: 189
Gaps: 0
Percent Identity: 89.947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 598.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to: 626
to: BF676817 from: 1
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4.952
98.413
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US-09-776-865-4 x BF676817
                                                                   seq_name: gb_est2:BF676817
                                                                                                                                                                                           mRNA sequence.
BF676817
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Ratio:
Percent Similarity:
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                                                                                                                                                                                                                                                                                      human.
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KEYWORDS
SOURCE
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ORIGIN
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AUTHORS
TITLE
JOURNAL
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603346858F1 NCI_CGAP_Mam2 Mus musculus cDNA clone IMAGE:5374407 5', MRNA sequence.
BI697765.1 GI:15660394
EST.
ADMINE MUSCULUS CDNA CLONE IMAGE:5374407 5', MRUA Sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus Sukaryotas, Chordata; Craniata; Vertebrata; Buteleostomi; Bukaryotas; Metazoa; Chordata; Craniata; Vertebrata; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 711)
1 (bases 1 to 711)
1 (bases 1 to 711)
1 (bases 1 to 711)
Nath-MCC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
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Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov.c. column: 16
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Tissue Procurement: Gilbert Smith, Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                            423
                                                                                                                                                                                                                                                                                                                                                                                                                   440
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                                                                                                                                                                                                                                                                                                                                       302 TCTTCTGGATTTAGCATCAACCATCTGGATATTGCTCTTCGTATGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AsnPheSerThrLeuTrpValArgArgValPheSerLeuIleGlyMetIl
                        152 AATTTTTCAACTTTATGTGTTCGCAGAATTTTTAGCCTTATAGGAATGAT
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                                                                                                                              202 TGGACCTGCAGTATTCCTGGTAGCTGCTGGCTTCATTGGCTGCTGTATTTT
                                                                                                                                                                                                                                 252 CITTGGCCGTTGCTTTCCTAACTATATCAACAACACTGGGAGGCTTTTGC
                                                                                                                                                                                                                                                                                                            SerSerGlyPheSerIleAsnHisLeuAspIleAlaProSerTyrAlaGl
                                                                                                                                                                                                                                                                                                                                                                                                                   ylleLeuLeuGlylleThrAsnThrPheAlaThrIleProGlyMetIleG
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/clone_lib="NCI_CGAP_Mam2"
/tissue_type="tumor, blopsy sample"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name: qb_est2:B1697765
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LOCUS BI697765
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900.00
2.719
72.113
                 seq_documentation_block:
LOCUS BC023331
DEFINITION MUS musculus
ACCESSION BC023331
                                                                                                           house mouse.
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Percent Similarity:
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                                                                                                                          ORGANISM
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                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                          VERSION
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SOURCE
                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                     REMARK
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                                                                                                                                                                                                                                                                                                   COMMENT
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// 1919 g 174 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            164 TAGCGATTTTGGCGTTCTGTGGTTTCTTCGTTCTTATGCCTTACGGGTG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GlyTrpIleLeuGlySerPhePheTyrGlyTyrIleIleThrGlnIlePr 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          oGlyGlyTyrValAlaSerArgSerGlyGlyLysLeuLeuLeuGlyPheG 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          142 lyllePheAlaThrAlaIlePheThrLeuPheThrProLeuAlaAlaAsp 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        159 PheGlyValGlyAlaLeuValAlaLeuArgAlaLeuGluGlyLeuGlyGl 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :::||||||| :::|||||||| 513 TTAGGCGTGGAGGACTGGGAGA 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uGlyValThrTyrProAlaMetHisAlaMetTrpSerSerTrpAlaProP 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64 GCGGGAAACGACGATGAGGAGAGCTCGGACAGCACCCCGCTCCTGCCGG 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264 TGATAATAGAACGTCTAAGGAGTGTGCGGAACATTCTGCCCCCATAAAAG 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                roLeuGluArgSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeu 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75 sAspAsnArgThrSerTyrGluCysAlaGluHisSerAlaProlleLysV 92
                                                                                                                                                                                                                                                                                                               9 AlaProSerAspGlyGluGluGlySerAspArgThrProLeuLeuGlnAr 25
                                                                                                                                                                                                                                                                                                                                                                                                                                         euAlaPheLeuSerPhePheGlyPhePheValLeuTyrSerLeuArgVal 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyThrValValSerLeuProLeuSerGlyValIleCysTyrTyrMet 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25 gAlaProArgAlaGluProAlaProValCysCysSerAlaArgTyrAsnL
                                                                                                                                                                                                     Percent Identity: 82.407
                                                                                                                                                                       Length:
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                                                                                                                                                                    915.00
4.530
93.519
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                                                                                                                                                                                                                                  alignment_block:
US-09-776-865-4 x BI697765
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Ratio:
                                                                                                                                                                                                Percent Similarity:
                                                                                         147
                                                                                                                                                       alignment_scores
                                                                                                                                                                                                                                                                                 Align seg 1/1
                                                                                         BASE COUNT
ORIGIN
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HTC 05-FEB-2002
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                                                                                                                                                                                    Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 1531)
Strausberg, R.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gunaratne, P.H., Garcia, A.M., Lu, X., Hulyk, S.W., Hale, S.M., Yoon, V.S., Kowis, C.R., Lawrence, S., Martin, R.G., Muzny, D.M., Richards, S., Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                     Submitted (05-FEB-2002) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clone distribution: MGC clone distribution information can be for through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAK Plate: 29 Row: f Column: 13 This clone was selected for full length sequencing because it passed the following selection criteria: Hexamer frequency ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Baylor College of Medicine Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db.zef="taxon:10090"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This clone has the following problem: no polyA-tail.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58 alAsnLeuSerValAlaLeuValAspMetValAspSerAsnThrTla 74
      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30 GluProAlaProValCysCysSerAla.....ArgTyrAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to: 1531
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Percent Identity: 38.998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequencing Center
Center code: BCM HGSC
Web site: http://www.hgsc.bcm.tmc.edu/cdna/
Contact: amg@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: The Cepko Laboratory
BC023331 1531 bp mRNA
Mus musculus, clone IMAGE:4500938, mRNA
BC023331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pCMV-SPORT6"
458 c 434 g 268 t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .1531
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                                                                                        BC023331.1 GI:18497348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-776-865-4 x BC023331/rev
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Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Rammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

Manmalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 736)

NIH-MGC http://mgc.ncl.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-rémail.nih.gov

Tissue Procurement: DCTD/DTP

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CLone distribution: MGC Clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

Loading Library Requence stop: 713.

Loadia Library Sequence stop: 713.

Loadian/Quallifiers
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// And Site_2: Sall; Cloned unidirectionally; Oligo-dT primed.
// And Site_2: Sall; Cloned u
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B1860521
B1860521.1 G1:16001268
ESF.
                                                     325 GGGGGTTTCGGGATGGAAGCCACGCTGCTGCTGGTGGTCGGATAC...TC 279
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            179
                                                                                                                                                                                                                                                                                                                                                                                    403 lyGlyPheCysSerSerGlyPheSerIleAsnHisLeuAspIleAlaPro 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420 SerTyrAlaGlyIleLeuLeuGlyIleThrAsnThrPheAlaThrIlePr 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    178 CGCTATGCCAGCATCTTGATGGCCATTTCCAATGGCGTGGGCACACTGTC 129
370 IleGlyMetIleGlyProAlaIlePheLeuValAlaAlaGlyPheIleGl 386
                                                                                                                                                                                               386 yCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerThrThrLeuG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         436 oClyMetIleGlyProIleIleAlaArgSerLeuThrProGluAsnThrI 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              453 leGlyGluTrpGlnThrValPheCysIleAlaAlaAlaIleAsnValPhe 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    128 TGGGATGGTGCCCCATCATCGTGGGTGCAATGACCAAGCACAAGACGC 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    228 GIGGCITTGCCATCTCTGGGTTTAACGTGAACCACTTGGACATCGCCCT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28 GGTGTCATCTATGGGGTCTTTGCT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_est2:BI860521
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LOCUS BI860521
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VERSION
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SOURCE
ORGANISM
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TITLE
JOURNAL
COMMENT
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04

95

112

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/note="Organ: salivary gland; Vector: pCMV-SPORT6; Site_l:
/note="Organ: salivary gland; Vector: pCMV-SPORT6; Site_l:
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/note: salivary gland; Vector: pCMV-SPORT6; Vector: pCMV-SPORT6; Vector: pCMV-SPORT6; Vector: pCMV-SPORT6; Vector: pCMV-SPORT
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NH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Jeffrey E. Green, M.D.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can lotter.

found through the I.M.A.G.E. Consortium/LLNL at:

http://mage.llni.gov
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Gaps: 8
Percent Identity: 70.714
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BF539146.1 GI:11626527
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US-09-776-865-4 x BF539146
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179 TyrProAlaMetHisAlaMetTrpSerSerTrpAlaProProLeuGluAr 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          eCysLeuValSerAspThrProGluThrHisLysThrIleThrProTyrG 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             279 SerValProTrpIleProMetLeuLysSerLeuProLeuTrpAlaIleVa 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .....GTATGGACTTTG.. 596
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                                                         Length: 224
Gaps: 2
Percent Identity: 75.000
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                                                      879.50
4.557
86.161
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US-09-776-865-4 x BI860521
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                                                            Quality:
                                                                                                                  Percent Similarity:
                                                                                     Ratio:
                         alignment_scores
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195

251

245

229

597

585

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28

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49 GlyPhePheValLeuTyrSerLeuArgValAsnLeuSerValAlaLeuVa
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammala; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 645)
Arakawa, T., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A.,
Hiramoto, K., Hori, F., Ishii, Y., Ito, M., Kawai, J., Konno, H., Kouda
, M., Koya, S., Matsuyama, T., Miyazaki, A., Nomura, K., Ohno, M.,
Okazaki, Y., Okido, T., Saito, R., Sakai, C., Sakai, K., Sano, H., Sasaki
, D., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Suzuki, H.,
Tagami, M., Tagawa, A., Takahashi, F., Takeda, Y., Tanaka, T., Toya, T.,
Muramatsu, M., and Hayashizaki, Y.
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Laboratory for Genome Exploration Research Group, RIKEN Genomic
Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BB537525 RIKEN full-length enriched, 0 day neonate eyeball Mus
musculus cDNA clone El30006F23 3' similar to AJ387747 Homo sapiens
mRNA for sialin, mRNA sequence.
BB537525
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142 GlyIlePheAlaThrAlaIlePheThrLeuPheThrProLeuAlaAlaAs 158
                                                                                                                                                                                                                                                           PPheGlyValGlyAlaLeuValAlaLeuArgAlaLeuGluGlyLeuGlyG 175
                                                                                                                                                                                                                                                                                                                                                   euGlyThrValValSerLeuProLeuSerGlyValIleCysTyrTyrMet 224
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                257 rileThrProTyrGluLysGluTyrIleLeuSerSerLeuLysAsnGlnL 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ....TTCCCTTTTGGAAGACAC.....ACTGGTGCCCTAAAAAACAGTT 836
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 PhelleLeuTrplleCysLeuValSerAspThrProGluThrHisLysTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ... ACACAATGGGAGGGGAAGGCCGTGATACCCCGAAATTCGAGAAA.
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Unpublished (2001)
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RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. . . 110 (11), 1757-1771 (2000) Konno, H., Fukunishi, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Y. and Hayashizaki,Y. Computer-based methods for the mouse full-length cDNA computer-based methods for the mouse full-length construction of a nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001) Kondo,S., Shinagawa,A., Salto,T., Kiyosawa,H., Yamanaka,I., Aizawa Hayashizaki,Y.
Email: genome-resides.

URL:http://genome.gsc.riken.go.jp/

Carnindi,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh

M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.

Normalization and subtraction of cap-trapper-selected cDNAs to

prepare full-length cDNA libraries for rapid discovery of new

genes. Genome Res. . 10 (10), 1617-1630 (2000)

Wagi,K., Fyliwake,S., Inoue,K., Togawa,M., Ohara,E.,

Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura

/S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and

Hayashizaki,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was primed with a primer [5, 60] GAGAGAGAGGGCGCCAACTCGAGTTTTTTTTTTTTVW 3'], cDNA was
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Site_1: Sall; Site_2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Computational Analysis of Full-Length Mouse cDNAs Compared with Human Genome Sequences Mamm. Genome. 12, 673-677 (2001)
Please visit our web site (http://genome.gsc.riken.go.jp/) for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone_lib="RIKEN full-length enriched, 0 day neonate eyeball"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              prepared by using trehalose thermo-activated reverse transcriptase and subsequently enriched for full-leng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length: 191
Gaps: 2
Percent Identity: 83.770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="eyeball"
/dev_stage="0 day neonate"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1 to: 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prepare mouse tissues.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54 GCGGGAAACGACGATGAGGAGAGCTCGGACAGCACCCCCCCTCCTGCCGGG 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92 alLeuHisAsnGlnThrGlyLysLysTyrArgTrpAspAlaGluThrGln 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302 TTCACCACAATCACACAGGTAAAAGTACAAGTGGGATGCAGAAACTCAA 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142 lyIlePheAlaThrAlaIlePheThrLeuPheThrProLeuAlaAlaAsp 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            159 PheGlyValGlyAlaLeuValAlaLeuArgAlaLeuGluGlyLeuGlyGl 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9 AlaProSerAspGlyGluGluGlySerAspArgThrProLeuLeuGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25 gAlaProArgAlaGluProAlaProValCysCysSerAlaArgTyrAsnL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42 euAlaPheLeuSerPhePheGlyPhePheValLeuTyrSerLeuArgVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59 AsnLeuSerValAlaLeuValAspMetValAspSerAsnThrThrAlaLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203 AACCTGAGTGT.GCGTTAGTGGACATGGTAGATTCAAATACAACTCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         252 IGATAATAGAACGTCTAAGGAGTGTGCGGAACATTCTGCCCCCCATAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            109 GlyTrpIleLeuGlySerPhePheTyrGlyTyrIleIleThrGlnIlePr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125 oGlyGlyTyrValAlaSerArgSerGlyGlyLysLeuLeuLeuGlyPheG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75 sAspAsnArgThrSerTyrGluCysAlaGluHisSerAlaProlleLysV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length: 223
Gaps: 0
Percent Identity: 82.063
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                                                                 Location/Qualifiers
1. .904
/organism="Mus musculus"
      Plate: LLAM9283 row: k column: High quality sequence stop: 680.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 214 c
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4.024
93.274
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_block:
US-09-776-865-4 x BF124137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF124137 904 bp mRNA linear EST 24-OCT-2000 601760838F1 NCI_CGAP_Mam5 Mus musculus cDNA clone IMAGE:4024064 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus Sukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 904)
MTH-MCC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Robin Humphreys
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10 GGACATGGTAGATTCAAATACAACTCTGACTGATAATAGAACGTCTAAGG 119
                                                                                                                                                                                                                                                                                                                                               177 ValThrTyrProAlaMetHisAlaMetTrpSerSerTrpAlaProProLe 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               193 uGluArgSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGlyT 210
                                                                                                                                                                                                               10 GGGTTCTTCGTTCTTCTAAGCCTANCGGGTGAACCTGAGTGTTGCGTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1AspMetValAspSerAsnThrThrAlaLysAspAsnArgThrSerTyrG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rgSerGlyGlyLysLeuLeuGlyPheGlyIlePheAlaThrAlaIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  149 PheThrLeuPheThrProLeuAlaAlaAspPheGlyValGlyAlaLeuVa
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BF124137.1 GI:10963177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     227 ThrTyrValPheTyrPhePhe 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_est2:BF124137
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VERSION
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JOURNAL
COMMENT
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                                                                                            65
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SOURCE
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153

42

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DEFINITION

ACCESSION VERSION KEYWORDS SOURCE

ORGANISM

REFERENCE AUTHORS

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prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was primed with a primer [5 mouse tissues.] 1st strand cDNA was GAGAGAGAAGGACCTTTTTTTTTTTTVN 3'], cDNA was
                                                                                                                     /clone_lib="RIKEN full-length enriched, 10 day neonate
                                                                                                                                                                                                                                                                                       /note="Site_1: SalI; Site_2: BamHI; cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136 CGCCCGGCAGACCGAAGCGGCTCCAGTGTGCTGCTCTGCTCGGTACAACT 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92 alLeuHisAsnGlnThrGlyLysLysTyrArgTrpAspAlaGluThrGln 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109 GlyTrpIleLeuGlySerPhePheTyrGlyTyrIleIleThrGlnIlePr 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 AlaProSerAspGlyGluGluGlySerAspArgThrProLeuLeuGlnAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        euAlaPheLeuSerPhePheGlyPhePheValLeuTyrSerLeuArgVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59 AsnLeuSerValAlaLeuValAspMetValAspSerAsnThrThrAlaLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75 sAspAsnArgThrSerTyrGluCysAlaGluHisSerAlaProlleLysV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gAlaProArgAlaGluProAlaProValCysCysSerAlaArgTyrAsnL
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Gaps: 2
Percent Identity: 80.500
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to: 682
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                                                                                                                                                                                                        /tissue_type="skin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from Lambda FLC I"
185 c 199 g
                                   /strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
                                                                                                                                                                             /sex="mixed"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.462
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     821.00
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Ratio:
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

I (bases 1 to 682)

Arakwa,T., Carninci,P., Fukuda,S., Furuno,M., Hanagaki,T., Hara,A.,

Hiramoto,K., Hori,F., Ishii,Y., Ito,M., Kawai,J., Konno,H., Kouda

,M., Koya,S., Matsuyama,T., Miyazaki,A., Nomura,K., Ohno,M.,

okazaki,Y., Okido,T., Saito,R., Sakai,C., Sakai,K., Sano,H., Sasaki

,D., Shibata,K., Shinagawa,A., Shiraki,T., Sogabe,Y., Suzuki,H.,

Tagami,M., Tagawa,A., Takahashi,F., Takeda,Y., Tanaka,T., Toya,T.,

RIKEN Mouse ESTS (Arakawa,T., et al. 2001)

L Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BB613552 BIKEN full-length enriched, 10 day neonate skin Mus musculus cDNA clone 4732491M05 5', mRNA sequence.
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Konno, H., Fukunishi, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara, Y. and Hayashizaki, Y.
Computer-based methods for the mouse full-length cDNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: genome-res@gsc.riken.go.jp,
URL:http://genome.gsc.riken.go.jp,
Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new penes. Genome Res. . 10 (10), 1617-1630 (2000)
wagi,K., Fujiwake,S., Inoue,K., Togawa,M., Ohara,E., Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsura
.S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-9222
Fax: 81-45-503-9216
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552 GGGTGTTACGTTTCCAGCTATGCACGC.ATGTGGTCTTCCTGGGCTCCCC 600
                                                    209 GlyThrValValSerLeuProLeuSerGlyValIleCysTyrTyrMetAs
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Hayashizaki,Y.
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TITLE JOURNAL COMMENT

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FEATURES

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GluLysGluTyrIleLeuSerSerLeuLysAsnGlnLeuSerSerGlnLy 278
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638 CGCGTCTCTT......ATGGTGGGGGAATTAAAGTCT..... 668
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                                                                      228 rValPheTyrPhePheGlyIleValGlyIleIleTrpPheIleLeuTrpI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            489 TCCTGGTAGCTGCTGGGTTCATTGGGTGTGATTATTCTTTGGCCGTGCTT
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                                                                                                                                                                                                     178 rTyrProAlaMetHisAlaMetTrpSerSerTrpAlaProProLeuGluA
                                                                                                                                                                                                                                                                                                                                rgSerLysLeuLeuSerIleSerTyrAlaGlyAlaGlnLeuGlyThrVal
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     428 IleThrAsnThrPheAlaThrIleProGlyMetIleGlyProIleIleAl
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          Align seg 1/1 to: BG541099 from: 1 to:
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/Organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="Imbac:464680"
/clone="Imbac:464680"
/clone="Imbac:464680"
/clone="Imbac:47"
/lab_bost="DH10B (T1 phage-resistant)"
/lab_bost="DH10B (T1 phage-resistant)"
/note="Organ: lung; Vector: pDNR-LIB (Clontech); Site_1:
Sfil (gqccgctcgqcc); Site_2: Sfil (ggccattatgqcc); S' and
3' adaptors were used in cloning as follows: 5' adaptor
sequence: 5'-CACGGCCATATGGCC-3' and 3' adaptor sequence:
5'-ATTGAGAGCGCGCGAGAGCGCGAGAGGCGCGAGAGGCGCGAGAGGCGCGAAGAGG
COT ON N = A, C, G, Or T). Average insert size 1.9
kb (range 0.5-4.0 kb). 12/15 colonies contained inserts
by PCR: This albrary was enriched for full-length clones
and was constructed by Clontech Laboratories (Palo Alto,
CA). Note: this is a NIH_MGC Library."
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
142 lyllePheAlaThrAlaIlePheThrLeuPheThrProLeuAlaAlaAsp 158
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                                                                                                                                                                   586 GGGTGTTACGTTTCCAGCTATGCACGCCATGTGGTCTTCCTGGGCTCCCC
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234 GlyileValGlyIleIleTrpPheIleLeuTrpIleCysLeuValSerAs 250
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//dev_stegge="adult"
//dev_stegge="adult"
//dev_stegge="adult"
//deb_noste="DH100"
//deb_noste="DH100"
//deb_noste="DH100"
//deb_noste="DH100"
//deb_noste="described or on the normal or oligo(dT) primer. Double-stranded or on the not I oligo(dT) primer. Double-stranded or Not I oligo(dT) primer. Double-stranded or Not I and cloned into the Not I and Eco RI sites of the modified pT/T3
//dev_stegge="described"
//dev_nostegge="described"
//dev_nostegge="descr
                                                                                                                                                                                                                                                                                                                                                                                                                    AAB33297 518 bp mRNA linear EST 23-FEB-1998 ud05d09.rl Soares_NMPu Mus musculus cDNA clone IMAGE:1434257 5' similar to WP:C38C10.2 CE00105 SODIUM/PHOSPHATE TRANSPORTER;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubuque, T., Geisel, S., Kucaba, T., Lacy, M., Le, M., Martin, J., Morris, M., Schellenberg, K., Steptoe, M., Tan, F., Underwood, K., Moore, B., Thelsing, B., Wylle, T., Lennon, G., Soares, B., Wilson, R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 518)
1 (bases 1 to 518)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This clone is available royalty-free through LLNL ; contact the IMAGE Consortium (info@lmage.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (1996)
Contact: Marra MyMouse EST Project
WashD-HHMI Mouse EST Project
WashD-HHMI University School of MedicineP
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
                                                  ...GGTGGCCACTTCTTATCACTATTT 692
461 ysIleAlaAlaAlaIleAsnValPheGlyAlaIlePhePheThrLeuPhe 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length: 172
Gaps: 0
Percent Identity: 84.884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MGI:918325
Seq primer: -28ml3 rev2 ET from Amersham High quality sequence stop: 444.
Location/Qualifiers
1. 518
/organism="Mus musculus"
/db_xref="taxon:10090"
/clone="Indage:1434257"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to: 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The WashU-HHMI Mouse EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA833297.1 GI:2907025
                                                                                                                                                                                                  478 AlaLysGlyGluValGln 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        803.00
4.896
95.349
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-776-865-4 x AA833297
                                                                                                                                                                                                                                                                                                    seq_name: gb_est1:AA833297
                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Waterston, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sednence.
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Percent Similarity:
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VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                         699
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Unpublished (2001)
Unpublished (2001)
Contact: Mickelson, J.R.
Contact: Mickelson, J.R.
Veterinary PathoBiology
University of Minnesota
1988 Fitch Avenue, University of Minnesota, St. Paul, MN 55108, USA
Tel: 612 624 1246
Fax: 612 625 0204
Email: micke001@unn.edu
Seq primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS BI817031 633 bp mRNA linear EST 03-OCT-2001
DEFINITION UMN07B04 Canine Brain cDNA Library Canis familiaris cDNA 5' similar
to Ovis aries membrane glycoprotein SP55, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa, Chordata, Craniata, Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis. 1 (bases I to 633)
Roberts,M.C., Hendrickson,J.A., Hoffmann,D.E., Flickinger,G.H., Rutherford,M.S. and Mickelson,J.R.
University of Minnesota Canine Brain EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    383
                                                                                                   51 TACACCAGAAAACTCACAAGACAATCTCCCATTATGAAAAAGAATACATTG 100
                                                                                                                                                                                                               384 PheileGlyCysAspTyrSerLeuAlaValAlaPheLeuThrIleSerTh 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     451 TITATAGGCTGTGACTATTCCTTGGCCGTTGCGTTCCTAACCATATCCAC 500
                                                                                                                                                                                    euSerSerLeuLysAsnGlnLeuSerSerGlnLysSerValProTrpIle 283
                                                                                                                                                                                                                                                                                       284 ProMetLeuLysSerLeuProLeuTrpAlaIleValValAlaHisPheSe 300
                                                                                                                                                                                                                                                                                                                                                                                              300 rTyrAsnTrpThrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetL 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                   201 CTACAACTGGTCTTTTACACCTTATTGACGCTACTGCCAACTTATATGA 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProTyrLeuGlyCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAs 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pAsnLeuArgAlaArgTrpAsnPheSerThrLeuTrpValArgArgValP 367
                                                                        250 pThrProGluThrHisLysThrIleThrProTyrGluLysGluTyrIleL 267
367 heSerLeuIleGlyMetIleGlyProAlaIlePheLeuValAlaAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
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ORIGIN

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51
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                                                                                                                                                                                                                                                                  RCE
                                                                                                                           midbrain
                                                               /note="Organ: Brain; Vector: pSPORT1 (Gibco BRL); Site_1
NotI; Site_2: Sall; Tissue was taken from the frontal,
occipital, temporal and parietal lobes, olfactory bulb,
hippocampus, cerebellum, thalamus, hypothalamus, midbra,
pns, and medulla." 8 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PThrPheTyrThrLeuLeuThrLeuLeuProThrTyrMetLysGluValL 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 GCCTGTTGGTTATGTATGATCTTGTCTGGTCAAGCTGCTGACAATTTAAG 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LysSerLeuProLeuTrpAlaIleValValAlaHisPheSerTyrAsnTr 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    euArgPheAsnIleGlnGluAsnGlyPheLeuSerAlaValProTyrLeu 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GlyCysTrpLeuCysMetIleLeuSerGlyGlnAlaAlaAspAsnLeuAr 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         353 9AlaArgTrpAsnPheSerThrLeuTrpValArgArgValPheSerLeuI 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 436 roGlyMetIleGlyProIleIleAlaArgSerLeuThrProGluAsnThr 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CysAspTyrSerLeuAlaVal.AlaPheLeuThrIleSerThrThrLeuG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      451 TGTGACTATTCATTGGCCGTGNGGT...CTTAACCATATCACAACACTGG 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        403 lyGlyPheCysSerSerGlyPheSerIleAsnHisLeuAspIleAlaPro 419
                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                 237 GlyllelleTrpPhelleLeuTrplleCysLeuValSerAspThrProGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uThrHisLysThrIleThrProTyrGluLysGluTyrIleLeuSerSerL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9615"
/clone_lib="Canine Brain cDNA Library"
/sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GGCATCATTTGGTTTATTTATGGATCTTTTTAGTTAGTGAAACTCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           euLysAsnGlnLeuSerSerGlnLysSerValProTrpIleProMetLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     370 leGlyMetIleGlyProAlaIlePheLeuValAlaAlaGlyPheIleGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420 SerTyrAlaGlyIleLeuLeuGlyIleThrAsnThrPhe.AlaThrIleP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ......GGATTAACATCAANCATCTGGATATGNTC
                                                                                                                                                                                                                                                            Gaps: 5
Percent Identity: 72.072
/organism="Canis familiaris"
                                                                                                                                                                                                                                            Length:
                                                                                                                                                                                                                                                                                                                                                                    to: 633
                                                                                                                                                                                                                                                                                                                                                                    from: 1
                                                                                                                                                                                                                                        796.00
4.303
83.333
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                                                                                                                                                                                                                                                                                                         alignment_block:
US-09-776-865-4 x BI817031
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                                                                                                                                                                                                                                                          Ratio:
Percent Similarity:
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                                                                                                                                                      164
                                                                                                                                                                                                                        alignment_scores;
                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1
                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      253
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documentation_block: 676 bp mRNA linear EST 20-OCT-2000 IS BE867611 ST 11 MIN_MGC_65 Homo sapiens cDNA clone IMAGE:3847279 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Library constructed by Life
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="adenocarcinoma"
/lab_host="DH10B (phage-resistant)"
/noto="Organ: colon; Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sal1; Cloned unidirectionally. Primer: Oligo di
                                                                                                                                                                                                                                                                                                                                                Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://mage-llnl.gov
Plate: LLAM9561 row e column: 08
High quality sequence stop: 676.
                                                                                                                                                                                                                                                                                                                                                                                                             NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 676)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     252
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17 rAspArgThrProLeuLeuGlnArgAlaProArgAlaGluProAlaProV
544 CITCNAIGCIGGAICCICIG......GGCAICACAAAICAIIGCACI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length: 192
Gaps: 2
Percent Identity: 79.167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Average insert size 1.8 kb.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to: 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rêmail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="IMAGE:3847279"
/clone_lib="NIH_MGC_65"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
1. .676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from: 1
                                                                                                                                                                                                                             mRNA sequence.
BE867611
BE867611.1 GI:10316387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Technologies.
171 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   782.00
4.418
92.188
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US-09-776-865-4 x BE867611
                                                                                                                         seiname: gb_est2:BE867611
                                                                     585 TTTCAGGAATGG 596
                                           453 IleGlyGluTrp 456
                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality:
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